

Intergenerational attitudes to HIV in relation to beliefs, levels of awareness and  
knowledge of transmission

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Intergenerational attitudes to HIV in relation to  
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## Declaration

This work is original and has not been submitted in relation to any other degree or qualification.

Signed:

Date:

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With many thanks to my supervisor Dr Liane Hayes for her assistance with this research.

# Department of Psychology

## Research Module Meeting Log 2015/2016

NAME:


SUPERVISOR: Dr Liane Hayes

Date	Discussion topics
03/07/15	Research possibilities surrounding HIV
25/11/15	Refining topic – attitudes towards HIV – completion of proposal
16/12/15	Discussion of proposal – planning questionnaire
20/01/16	Ethics application – discussion of completed draft
	Questionnaire – format and question types
	Participant Information Sheet – style and inclusions
03/02/16	Ethics application – final draft
24/02/16	Ethics application outcome – amendment submission
22/02/16	Ethics approval (email correspondence)
13/04/16	Data collection progress – RPS completion – forward planning of literature review and methodology section of report
04/05/16	Progress update
01/06/16	Discussion re: data collection; hypotheses; methodology
29/06/16	Completed data entry; planning statistical analyses
25/07/16	Discussion of techniques for analysing results
27/07/16	Statistics surgery exploring factor analysis (Dr Lee Hulbert-Williams)

03/08/16	Statistics surgery discussing development of measures, sub-scales and issues of internal consistency (Dr Claudine Clucas)
17/08/16	Progress meeting and discussion of statistical analyses
07/09/16	Submission of draft dissertation (excluding discussion)
18/09/16	Submission of discussion
22/09/16	Feedback meeting re: draft dissertation
04/10/16	Submission of completed dissertation

SIGNED:

STUDENT \_\_\_\_\_ DATE \_\_\_\_\_

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## Table of contents

Title page and word count	2
Declaration	3
Acknowledgements	4
Supervision log	5
Table of contents	7
List of tables and figures	8
<b>1. Abstract</b>	<b>9</b>
<b>2. Introduction</b>	<b>10</b>
2.1 HIV	10
2.2 Attitudes	13
2.3 Age	17
<b>3. Method</b>	<b>23</b>
3.1 Participants	23
3.2 Measures	23
3.3 Procedure	24
3.4 Analysis and Design	25
<b>4. Results</b>	<b>26</b>
<b>5. Discussion</b>	<b>40</b>
5.1 Findings	40
5.2 Implications	41
5.3 Limitations	49
<b>6. Conclusion</b>	<b>52</b>
<b>7. References</b>	<b>54</b>
<b>8. Appendices</b>	
Appendix A HIV Attitudes Questionnaire	77
Appendix B Participant Information/Debrief Sheet	81
Appendix C Participant E-mail Invitation	82
Appendix D Verbal Script: Face-to-Face Participant Recruitment	83
Appendix E Ethics Application and Review Form	84
Appendix F Ethics Amendment and Approval Form	102
Appendix G P-Plot & Scatterplot	105
Appendix H SPSS Outputs (attached CD Rom)	

## List of Tables

### Tables

Table 1	Means and Standard Deviations by Age Group with Cronbach $\alpha$ for HIV Questionnaire Items	28
Table 2	Pattern and Structure Matrix for Principal Components Analysis with Oblimin Rotation of Two Factor Solution of HIV Attitude Items	32
Table 3	Means/ Standard Deviations by Age Group for all HIV Measures	33
Table 4	Means/ Standard Deviations by Gender for all HIV Measures	34
Table 5	Means/ Standard Deviations by Sexual Orientation for all HIV Measures	34
Table 6	Means/ Standard Deviations by Education for all HIV Measures	35
Table 7	Means and Standard Deviations by HIV Awareness for all HIV Measures	35
Table 8	Correlations for age, gender, sexual orientation, education and HIV awareness in relation to all HIV Measures	36

## List of Figures

### Figures

Figure 1	Scree Plot of HIV Questionnaire Items	31
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### **Abstract**

Attitudes to HIV vary greatly. Knowledge and experience of HIV awareness-raising campaigns is thought to both mediate and moderate opinions and beliefs. The purpose of the study was to examine modern-day attitudes to HIV among five generations. Self-reported levels of HIV awareness, attitudes, beliefs and knowledge were explored in relation to age. Additional independent variables of gender, sexual orientation and levels of education were also investigated. A sample of 115 participants with an average age of 38 years (77 female and 38 male) engaged in a survey-based study in which participants completed an HIV questionnaire. Correlations with positive attitudes to HIV were found among older age groups and those with higher levels of self-reported HIV awareness. Exploration of the relationship between age and attitudes to HIV were supported by the body of literature concerning HIV awareness and integrated health promotion campaigns were recommended if attitudes to HIV are to become increasingly positive among future generations.

## **Intergenerational attitudes to HIV in relation to beliefs, levels of awareness and knowledge of transmission**

### **HIV**

It is currently estimated that 36.7 million people around the globe are living with the Human Immunodeficiency Virus (HIV) and/or Acquired Immune Deficiency Syndrome (AIDS) (UNAIDS, 2016). Thirty five years since clusters of opportunistic infections and cancers such as pneumocystis pneumonia and Kaposi Sarcoma were discovered among populations of young homosexual men, HIV remains incurable. In 2014, 103,700 people in the UK were thought to be living with HIV, of whom 18,100 were unaware of their status. Indeed, among British heterosexuals aged 15-44, almost one in every 1000 is now believed to be HIV positive (Skingsley et al., 2015).

The HIV/AIDS epidemic began in the early 1980s. Popular media reported scare stories about transmission and members of the public believed HIV could be caught from toilet seats, shaking hands or sharing crockery (Hughes & Alford, 2016; Wellings, 1988). An estimated 7,500 people were initially diagnosed in the UK, the majority of whom were men who had sex with men (MSM) (Young & Meyer, 2005). HIV was known as 'the gay plague' (Howard & Yamey, 2003, p. 454) and attitudes towards homosexuality became polarised, being either sympathetic or blameful. Social ostracisation meant that those with HIV/AIDS died in pain and in shame, with fear and stigma playing a major factor in their suffering (Veeken, 2000).

Campaigning for HIV awareness was initially led by the gay community (Shepherd & Wallis, 1989). It was not until non-marginalised sectors of the population became infected that the government began to pay attention to the epidemic (Lewis & Knijn, 2002). Scientists discovered

that HIV caused AIDS by attacking the immune system and reducing the body's ability to fight infection. HIV was spread via blood and semen and transmission also occurred from mother to child during pregnancy or birth (Gray & McIntyre, 2007). The epidemic began to affect heterosexuals, women and children and the virus appeared in populations other than MSM, including haemophiliacs (Darby et al., 2004). Only then was a government-backed campaign deemed necessary (Nicoll et al., 2001).

A series of television adverts were broadcast showing tombstone and 'tip of the iceberg' imagery, with a foreboding commentary proclaiming sexual activity with an infected person was likely to result in death and that the situation with HIV was going to get worse (Soames-Job, 1988). Leaflets were sent to all households in Britain informing the public that HIV could be contracted by dirty needles or, more commonly, through sexual intercourse without a condom. Haemophiliacs who had received tainted blood products were seen as innocent victims, whereas MSM were viewed as authors of their own misfortune (Herek & Greene, 1995). Indeed, in 1986 the Chief Constable of Greater Manchester Police referred to homosexuals infected with HIV as "swirling about in a human cesspit of their own making" (Emsley, 1996, p.186).

From a medical perspective, the health promotion campaign was highly successful. A significant reduction in the number of new HIV diagnoses occurred within three years, with infection rates falling from 3,000 in 1985 to less than 1,000 in 1988 (Grulich & Kaldor, 2008). It has been argued, however, that the campaign's use of fear appeal to modify behaviour via activation of cognitive and affective fear arousal responses also produced a form of denial in those who were most at risk of infection (Ruiter, Abraham & Kok, 2001). Attitudes towards HIV were formed by one of the most memorable health promotion campaigns ever created and, although public understanding of HIV advanced significantly, doom-laden imagery fuelled the stigma which surrounded those who were infected (Witte & Allen, 2000). Indeed, a recent meta-analysis of

the many theoretical models of fear appeals - including that of the attitude-based Protection Motivation Theory (PMT) - recommended caution in their application for purposes of behaviour-modification (Peters, Ruiter & Kok, 2014).

In the mid-1990s, the discovery of anti-retroviral therapy (ART) significantly reduced the progression of HIV infection and an HIV diagnosis was not the death sentence it once was (De Clercq, 2009). People began to live with HIV (PLWH), albeit a condition that required administration of round-the-clock medication to prevent white CD4 blood cell counts falling too low (Autran et al., 1997). Whilst staving off life threatening cancers from AIDS, the effects of combination therapies included weight loss, chronic diarrhoea and severe lethargy. Those who were infected became disabled, not having energy for everyday activities (Carr & Cooper, 2000). Nonetheless, sufferers remained alive and pharmacological developments continued to progress, with effective ART eventually enabling people to live long lives without developing AIDS (Zolopa et al., 2009). Indeed, the combination of medications used to manage HIV meant a person's viral load (the amount of virus present in the blood) could drop to undetectable levels. In theory, this meant PLWH were no longer infectious through sexual contact, although a model by Wilson, Law, Grulich, Cooper and Kaldor (2008) suggested a four-fold increase in the incidence of sexual infection among those taking ART, as opposed to rates seen with condom-use. It must be noted, however, that the model was not without statistical limitation due to broad estimations of sexual activity over a 10 year period.

To an extent, the medical, long-term management of HIV became like other chronic conditions, such as diabetes or arthritis (Swendeman, Ingram & Rotheram-Borus, 2009). As the infection no longer killed people in the West, this created a false sense of security which resulted in more nonchalant attitudes to HIV (Lewis, 2009). Indeed in 2016, many people do not understand that HIV remains incurable, nor of the health challenges posed by its infection. For example, lifetime

prevalence of depression has been estimated at 22-45% higher for PLWH than among those in the general population due to the prejudice associated with infection (Penzak, Reddy & Grimsley, 2000) and HIV-related stigma poses a significant and challenging characteristic not found among other chronic health conditions (Swendeman, Ingram & Rotheram-Borus, 2009).

Years after scientists traced the origins of HIV to West Africa (humans were infected by a mutated strain of simian immunodeficiency virus when they hunted chimpanzees for meat) the epidemic continues to spread (Montaner et al., 2006). Despite significantly improved mortality and morbidity rates due to low cost ART, medical progress has not been matched by positive attitude change within society and those with HIV remain ostracised by their positive status (Wen et al., 2011). A literature review by Rechel (2010) found that in many countries HIV-related stigma was associated with negative public attitudes towards PLWH, as well as prejudicial attitudes of governments. Public health campaigns and education programmes have been less prominent since the introduction of ART (Kirby, Laris & Roller, 2007; Warriner, 2014) and, as such, it is argued that lack of awareness facilitates not only the risk of exposure to HIV - especially among young people (Koenig, Hoyer, Purcell, Zaza & Mermin, 2016) - but also the growth of stigmatising attitudes (Jeffries & Johnson, 2015).

## **Attitudes**

Attitudes are one of the oldest and most studied constructs in social psychology (Maio & Haddock, 2015). Allport defined an attitude as a “mental and neural state of readiness” (Allport, 1935, as cited in Hogg & Vaughan, 2014, p.150) and contemporary research investigates attitudes in relation to the evaluation of attitude ‘objects’ - in this case HIV. An attitude ‘structure’ has three main components: an affective component involving feelings and emotions towards the attitude object; a behavioural component in terms of its influence on actions and behaviour; (and) a cognitive component involving belief and knowledge about the object. Many theorists

consider attitudes to be stable rather than transitory (Phillips, Clery, Curtice & National Centre for Social Research, 2016) and the principle of attitudinal consistency suggests that attitudes are consistent with behaviour, although seminal research has demonstrated this is not always the case (LaPiere, 1934). As such, attitudinal stability is best viewed on a continuum, often determined by variations in cognitive structure (Huskinson & Haddock, 2004). Furthermore, a distinction between attitudes that are within an individual's control (deliberative) and those that are not (automatic) is suggested in terms of explicit versus implicit attitudes (Devine, 1989; Smith & Nosek, 2011).

Much attitudinal literature has focused on the influence of attitudes on behaviour, as well as their formation, structure and function (Ajzen, 2005; Pratkanis, Breckler & Greenwald, 2014). Research has also explored the differences between positive and negative attitudes within a social context and how attitudes might be changed (Terry, Hogg & NetLibrary, 2000; Zimbardo & Leippe, 1991). For example, a longitudinal study by Helleringer and Kohler (2005) examining the perception of HIV-risk in relation to social networks found that social interaction was a crucial vector for positive attitude change. The challenge with HIV in 2016 is therefore less about medicine and more about the reduction of negative attitudes within society. As such, potential predictors of attitudes concerning HIV are investigated in order to reduce, prevent and better understand HIV-associated prejudice, discrimination and stigma (Nyblade, 2006). Goffman (1963, p.3) defined stigma as 'the phenomenon whereby an individual with an attribute deeply discredited by his/her society is rejected' and although HIV as a virus does not discriminate in terms of race, income or sexuality, stigma remains a significant feature of the HIV experience. Indeed, it is argued that stigma has a significant, adverse effect on HIV prevention, education and treatment programmes (Earnshaw & Chaudoir, 2009; Méthy, Velter, Semaille & Bajos, 2015).

The psychological impact of the fear of discrimination or 'felt stigma' associated with HIV cannot be underestimated (Green, 1995). A study of PLWH in New York (N=95) suggested internalised stigma negatively influenced levels of self-care and was associated with adverse signs of affective and behavioural ill health and well-being, including helplessness and non-adherence to ART regimes (Earnshaw, Smith, Chaudoir, Amico & Copenhaver, 2013). Likewise, a recent female-only study of PLWH found that HIV-related stigma was positively associated with negative self-image and anxiety about public attitudes (Brown, Serovich, Kimberly & Hu, 2016). Internalised HIV-related stigma must therefore be addressed by raising awareness via educational programmes that increase public understanding of its debilitating effects.

Attitudes to HIV are formed by legal regulations and restrictions, as well as socio-cultural factors (Parker, 2001). For example, homosexuality remains a criminal offence in 72 countries around the world (Carroll & Itaborahy, 2015) and many MSM do not seek treatment or advice about HIV for fear of imprisonment (Semugoma, Beyrer & Baral, 2012). A questionnaire-based cross-sectional survey by Haroun et al. (2016) among male (n=406) and female (n=1,888) students in the United Arab Emirates (UAE) found there were no significant differences between the sexes in terms of knowledge and attitudes towards HIV, but average scores concerning accuracy of transmission were relatively low at 61%. Likewise, a negative attitudinal average of 85% suggested participant opinion was affected by UAE cultural and legal influences, with negative characteristics being attributed to PLWH in the form of stigma and prejudice. In contrast, a Swedish study examining knowledge and public attitudes to HIV between 1987 and 2011 suggested knowledge of transmission had significantly improved and attitudes towards HIV had become markedly positive (Plantin, 2016). As the study was longitudinal in nature, however, data extrapolation ceiling effects and replication limitations may have influenced the results (Wang, Zhang, McArdle & Salthouse, 2008). In addition, a study of HIV attitudes and knowledge among students in Botswana (N=445) found that whilst over 90% of students correctly identified

accurate HIV transmission routes, beliefs also included the use of witchcraft for purposes of infection (Faimau et al., 2016). Such findings clearly demonstrate the socio-cultural differences that can influence attitudes to HIV. However, it must be noted that standardisation methodology used to adjust for bias in cross-cultural research is often ambiguous and must be interpreted with caution (Fischer, 2004).

Western attitudes to HIV are less prejudicial than those found in developing countries and the symbolic association between HIV and MSM appears to be diminishing (Bancroft, 2001). However, negative attitudes to HIV can be based on a response to stereotypes (Mahajan et al., 2008). Devine (1989) examined the relationship between stereotypes and prejudice by testing the dissociation of automatic and controlled prejudicial processes and suggested that, whilst most people were equally knowledgeable of stereotypes, those with a low prejudice response employed a controlled cognitive process of inhibition. In helping to understand negative attitudes towards HIV, therefore, the application of such research suggests that explicit cognitive processes involving belief and feeling structures are evaluated in relation to positive and negative affect, the basis of which is explained by Festinger's cognitive dissonance theory (1957).

Negative attitudes appear to perpetuate the social stigma associated with HIV, which in turn may be influenced by a lack of education (Barss et al., 2009). A migrant study by Tompkins, Smith, Jones and Swindells (2006) found a significant risk of HIV infection among a Sudanese population in Nebraska (N=47). The study evaluated participant knowledge, attitudes and beliefs about HIV and suggested a number of participants exhibited attitudes and beliefs that increased their risk of contracting HIV by engaging in high-risk sexual behaviour due to poor education about transmission. However, whilst there appeared to be a need for improved access to culturally appropriate HIV education, attitudes associated with high-risk behaviour



have also been linked to issues of gender status and the balance of power within different cultures, not merely to a lack of education (Bajos & Marquet, 2000).

Discriminatory attitudes to HIV have been explored for their association with a range of prospective predictor variables (DiClemente et al., 2008) including religion (Lefkowitz, Gillen, Shearer & Boone, 2004), lack of condom-use assertiveness (Zamboni, Crawford & Williams, 2000) and adolescence (Swendeman, Rotheram-Borus, Comulada, Weiss & Ramos, 2006). They have also been investigated in relation to health care. For example, a study investigating nurses' attitudes to caring for patients with HIV (N=57) found that 36% would choose to refrain from working with HIV-infected patients if they could opt to do so (Röndahl, Innala & Carlsson, 2003). However, as the study used a questionnaire that was not tested for reliability and the sample population was relatively small and not recruited by random selection, the findings could not be generalised for use in a wider context.

## **Age**

Prior to the public health campaign of the 1980s, attitudes to HIV among all age groups were based on a lack of knowledge and a culture of fear. In 2016, however, the attitudes of those over the age of 40 who had direct experience of the 'tip of the iceberg' campaign may differ to those of younger generations due to the lack of awareness-raising initiatives since the start of the millennium. In 2006, Testa and Coleman argued that HIV education had lost its way, given that numbers of UK cases of HIV had increased by 7,000 each year since 1999. Research which supported this assertion included a study by Brown et al. (2006), suggesting that lack of information and poor mental health were associated with negative attitudes and an increased risk of HIV among young people. Likewise, Godeau et al. (2008) discovered that, in contrast to other Western countries, 37% of 15 year olds in the UK were more predisposed to HIV than any other age group due to misconceptions about transmission.

Categorising by age is used extensively in psychological research and attitudes and beliefs about HIV of those in different age groups are influenced by a range of circumstances, including social class, family upbringing and cultural stereotype (Harris, Palmore & Branch, 2016; Schipani, 2013). For example, O'Bryan, Fishbein and Ritchey (2004) explored attitudes towards MSM and PLWH in relation to the intergenerational transmission of prejudice and stereotyping among parents of 14 to 17 year olds. The attitudes of 111 adolescents and their parents were analysed using multiple regression and two perceptible gender influences were found: mothers influenced their children's prejudicial attitudes about PLWH and fathers influenced their children's prejudicial attitudes about MSM. Despite limitations of structural equation modelling (Tomarken & Waller, 2005), the study supported previous research which suggested that young people appear to be susceptible to attitudinal persuasion (Krosnick & Alwin, 1989) and the attitudes of older people are influenced by cultural and societal mores (Giles & Coupland, 1991). Interestingly, the authoritarian personality model (Adorno et al., 1950) proposed that displaced aggression towards parents during childhood leads to prejudice towards minority groups and Visser and Krosnick's (1989) 'life stages' hypothesis maintained that the young and the old shared a susceptibility to attitudinal plasticity that was not observed in middle-age.

An investigation into HIV knowledge and attitudes among adults aged 18 to 75 years (N=2,018) found that levels of knowledge were lowest among those over the age of 60 (Prati, Mazzoni & Zani, 2014). The older age group was less likely to have discussed HIV with health professionals and their attitudes towards HIV were based on limited exposure to accurate information and advice. As such, the study recommended that older adults should be targeted with HIV prevention initiatives and health educators should be cautious about making generalisations about attitudes towards HIV based on age. However, as the telephone survey used in the research was conducted via computer-assisted technology, it is possible that some

of the responses may have lacked honesty and accuracy (Tourangeau & Yan, 2007) and self-reporting anxiety due to reasoned action may also have affected the results (Ajzen & Fishbein, 1980).

Based on a similar premise, a mixed methods multivariate analysis by Ludwig-Barron et al. (2014) examined HIV knowledge and attitudes among Californian women (N=154) in two age categories: 18 to 44 years and 45 years and above. The research found that those in the older age group had a lower knowledge of HIV than younger participants (85% compared to 90%) and that older age was associated with reduced attitudinal concern towards HIV prevention, in particular, to attitudes about condom-use. However, as both groups identified as users of methamphetamine and had experience of partner violence, the distinctiveness of the sample meant that extrapolation of outcome data and its application to a wider context was limited by recreational drug use and experience of hostile relationships. In contrast, negative attitudes and inaccurate knowledge of HIV transmission among army personnel in Nigeria was suggested to be three times higher among participants under the age of 30, with nine percent believing HIV could be contracted through mosquito bites, as opposed to three percent among those over 30 years of age (Okeke, Onwasigwe & Ibegbu, 2012). It must be noted, however, that such data may contrast with that of Western populations due to cultural and environmental influence and not merely due to a lack of knowledge (Smith, 2004).

Different age groups may demonstrate varying levels of implicit and explicit attitudes towards HIV and the effect of age may be moderated by knowledge and experience (Siegel, Raveis & Karus, 1998). Equally, attitudinal and behavioural consequences of HIV campaigns may influence those of different ages in different ways, with older adults perceiving a greater threat to health and well-being in general, but for whom HIV has less significance due to previous and/or existing experience of chronic and life-changing illness (Elam et al., 2008). Campaign target age

may also influence attitudes and perception of vulnerability to HIV, with a greater propensity for negative attitudes seen among young people who consider that HIV ‘happens to other people’ (Irwin & Millstein, 1986, p.82). A study exploring the impact of fear-arousal posters depicting the negative side-effects of ART suggested that MSM over the age of 30 considered the posters to be targeting younger men, whilst those under the age of 30 believed the target audience was MSM involved in sexually promiscuous behaviour (Slavin, Batrouney & Murphy, 2007). As such, both cohorts sought to deflect the poster messages away from themselves.

Other variables may also be associated with age-related attitudes to HIV, such as gender and sexuality. For example, although there is little empirical data regarding attitudinal gender differences to HIV among people over the age of 65, a study involving both sexes (N=160) found that women had greater knowledge of HIV than men and were more likely to dispel myths about its transmission despite exhibiting significant levels of HIV-related stigma (Hillman, 2007). Likewise, a study exploring attitudes to HIV and self-efficacy in relation to condom-use suggested differential responses by gender, with men having significantly lower self-efficacy in relation to HIV-protection than women (Dekin, 1996). However, the design of the study may have introduced age-related bias as recruitment of the sample population only involved college students.

It is also suggested that sexuality may influence attitudes to HIV. For example, HIV-positive MSM face discrimination and prejudice from HIV-negative members of the MSM community known as ‘in-group stigma’. A study examining the impact of in-group stigma on the mental health of HIV-positive MSM in Hong Kong (N=100) found that in-group negative attitudes were a significant factor in reducing mental well-being among the HIV-positive MSM (Chong, Mak, Tam, Zhu & Chung, 2016). Likewise, a study examining gender and sexuality in terms of the attitudes of HIV-negative heterosexuals in serodiscordant relationships (in which their partners were HIV-

positive) found that whilst all participants (N=13) had a high level of interest in pre-exposure prophylaxis (PrEP) as a means of preventing HIV transmission during conception, men (n=6) expressed a greater interest in PrEP for purposes of recreational sexual intercourse than women (n=7) (Falcão et al., 2016). It must be noted, however, the face-to-face and telephone-based semi-structured interviews that were transcribed for the study's thematic analysis only attested to the experiences of the participants (Barbour, 2007), thus denying the active role the researchers may have played in the analysis (Braun & Clarke, 2006).

Few studies in the literature have examined intergenerational attitudes to HIV and it was of interest to explore associations between five generations in terms of attitudes, beliefs, knowledge of transmission and self-reported levels of HIV awareness. The aim of the study was to examine the role of age as a primary independent predictor variable of present-day attitudes towards HIV in relation to beliefs, knowledge of transmission and self-reported levels of HIV awareness, together with secondary independent variables of gender, sexual orientation and education levels. The primary and secondary hypotheses informed by the literature were therefore:

- (H1) There would be a non-directional significant relationship between age and HIV measures of attitudes, beliefs and knowledge of transmission;
- (H2) There would be a non-directional significant relationship between gender and HIV measures of attitudes, beliefs and knowledge of transmission;
- (H3) There would be a non-directional significant relationship between sexual orientation and HIV measures of attitudes, beliefs and knowledge of transmission;

- (H4) There would be a significant positive relationship between education levels and HIV measures of attitudes, beliefs and knowledge of transmission;
- (H5) There would be a significant positive relationship between self-reported levels of HIV awareness and HIV measures of attitudes, beliefs and knowledge of transmission;
- (H0) The null hypothesis for each of the five hypotheses was that there would not be a significant relationship between the individual IVs and HIV measures of attitudes, beliefs and knowledge of transmission.

## Method

### Participants

A total of 115 participants took part in the study. A further eight gave consent to be included but their questionnaires were omitted from the research. Three omitted year of birth, two excluded responses concerning sexual orientation and one missed a response to item eight '*I would be happy to have a relationship with someone who had HIV*'. Given the sensitive nature of the study, two questionnaires were also removed due to participant self-identification and the inclusion of written information that did not form part of the research. The process complied with the British Psychological Society's ethical code of conduct and the research had ethical approval by the Ethics Committee of the Department of Psychology at the University of Chester.

### Measures

Based on a review of the literature, a 23 item questionnaire (Appendix A) was created to explore the attitudinal dimensions of HIV. The questionnaire was divided into three sections. Section A entitled 'About You' contained four items for capturing demographic data of gender, year of birth, sexual orientation and level of education. A fifth item required participants to indicate a level of HIV awareness and was placed at the beginning of the questionnaire to reduce the possibility of priming (Bargh, Chen & Burrows 1996; Molden, 2014). Section B entitled 'What's Your Opinion?' contained 12 items to form a 'Measure of Attitude'. Likewise, Section C entitled 'HIV Transmission and Knowledge' contained five items for determining participant accuracy of HIV transmission and to form a 'Measure of Knowledge'. A final item (item 23) asked participants to indicate strength of opinion about public health information reducing HIV transmission rates. Initial examination of instrument reliability found items 12, 15, 20 and 22 reduced the Cronbach alpha coefficient to below .7, each having corrected item-total correlation values of less than .3 (item 12 = .0; item 15 = -.1; item 20 = .0; item 22 = -.1). These were removed and the remaining

14 items had an acceptable internal consistency  $\alpha$  of .75 (Pallant, 2013). Principal component analysis was performed for purposes of data reduction and to explore the factor structure of the questionnaire. Items 16, 17 and 23 were subsequently grouped with items 12 and 15 to form a five-item 'Measure of Belief' (see Factor Analysis results). The 'Measure of Knowledge' incorporated items 18 to 22, with the highest possible score of 25 representing fully accurate knowledge concerning HIV transmission. In summary, an eight item measure was created to explore attitudes, together with a five item measure to examine beliefs about HIV issues/ education and a five item measure to test accuracy of knowledge about HIV transmission. All items in Sections B and C were marked on a five-point Likert scale ranging from one, 'strongly disagree', to five, 'strongly agree'. Those that had been negatively phrased to minimise response bias were reverse scored prior to analysis for purposes of in-measure comparison (Podsakoff, MacKenzie & Podsakoff, 2012).

## **Procedure**

The researcher provided each participant with a questionnaire to which a Participant Information Sheet (Appendix B) was attached. Participants were recruited by email (Appendix C), word of mouth (Appendix D) and via the University of Chester's Research Participation Programme (RPS) system. Participants completing via RPS were offered a two-credit incentive. Participants were informed completion of the questionnaire would take approximately 15 to 20 minutes, although no time-constraint was prescribed. Participants were asked to answer all items by marking one of the five scales that most accurately described their opinion. They were able to omit responses to any items they did not wish to answer, with the accompanying Participant Information Sheet explaining that any uncompleted questionnaires would not be included in the study. Debriefing occurred at the end of the questionnaire and involved signposting to relevant support agencies. Participants were asked to return completed questionnaires to the researcher



and anonymity was maintained in accordance with the conditions of the ethics application (Appendix E).

### **Analysis and Design**

The study had a within subjects cross-sectional survey design, the operationalisation of which involved completion of a twenty-three item questionnaire. Full data was provided for all participants (N=115) as no partially completed questionnaires were included in the study. Factor, correlational and multiple regression analyses were carried out to explore HIV attitudes, beliefs and knowledge with five independent variables, the primary of which was age (IV1). Participant ages were grouped as: 25 years and under; 26-35 years; 36-45 years; 46-55 years; 56 years and over. Each age group represented a different decade during which participants came of age and may (or may not) have been exposed to HIV education initiatives or awareness campaigns. The different generations were identified in conjunction with the following decades: 2010s (25 years and under); 2000s (26-35 years); 1990s (36-45 years); 1980s (46-55 years); mid/late 1970s (56 years and over). The data therefore related to five consecutive generations. The dependent variables ( DVs) were: positive/ negative attitudes towards HIV; strong/ weak beliefs concerning HIV issues; (and) correct/ incorrect knowledge about HIV transmission/prevention. In addition to age (IV1), secondary independent variables of gender (IV2), sexual orientation (IV3), educational attainment (IV4) and self-reported levels of HIV awareness (IV5) were also examined.

## Results

To determine whether data were approximately normally distributed, diagnostic normality tests were carried out prior to inferential testing. Kolmogorov-Smirnov and Shapiro-Wilk tests of normality were calculated for all demographic data, together with skewness and kurtosis values. A significant Kolmogorov-Smirnov value for age ( $p < 0.001$ ) suggested a violation of the assumption of normality, although a z-score calculation of 1.01 suggested the skew was not significant. Gender, sexual orientation and education levels were all found to be skewed, although HIV awareness levels were not, having a z-score of -1.72. In addition, histograms, boxplots and normal probability plots suggested questionnaire data complied with the assumptions of the analyses undertaken, which involved: factor analysis to reduce attitudinal data and explore sub-scales of positive and negative affect; correlational analysis to measure relationship strengths between age, gender, sexual orientation, education, self-reported levels of HIV awareness and the HIV measures; (and) multiple regression analysis to measure the predictive values of any variables associated with the HIV measures.

### Descriptive, Frequency and T-Test Statistics

The ages of the 115 participants ranged from 17 to 68 years ( $M$  38.05 years,  $SD$  15.64) and the sample consisted of 38 (33%) males and 77 (67%) females. An independent-samples t-test was conducted to examine the difference between the average ages of males and females. The Levene's test assumed equal variances and there was a significant difference in the ages of males ( $M$  43.97,  $SD$  14.51) and females ( $M$  35.13,  $SD$  15.43;  $t(113) = 2.95$ ,  $p = .19$ , two-tailed). The magnitude of the differences in the means (mean difference = 8.85, 95%  $CI$ : 2.90 to 14.79) as proposed by Cohen (1990) was moderate ( $\eta^2 = .07$ ).

Participant sexual orientation was identified as: 102 (88%) heterosexual; 7 (6%) gay/lesbian; 2 (2%) bisexual; 1 (1%) asexual; 2 (2%) pansexual/other; (and) 1 participant (1%) indicated they would 'rather not say'. All 115 participants provided education data ranging from GCSE to postgraduate levels, the majority of whom at 45 (39%) had studied at undergraduate level. Likewise, 42 (37%) participants identified as postgraduate, demonstrating that three quarters of the overall sample was educated to degree level or above. Of the remaining 28 participants, 6 (5%) specified a GCSE level of education, 10 (9%) indicated A' level and 12 (10%) denoted vocational education. In addition, HIV awareness levels were reported by all participants using a 3 point Likert-type scale which utilised the responses 'very aware', 'fairly aware' or 'unaware'. 27 (24%) participants indicated they were very aware of HIV, 83 (72%) indicated they were fairly aware and 5 (4%) were unaware.

All participants responded using a 5 point Likert scale. The mean scores by age group for the 14 items with acceptable internal consistency are provided in Table 1. Each item had a maximum score of five, with high mean scores representing high strength of agreement with the item statement. Highest mean scores by age group are shown in bold. Scores for items 6, 8 and 11 represent strength of positive attitude. Scores for items 7, 9, 10, 13 and 14 represent strength of negative attitude. Scores for items 16, 17 and 23 represent strength of belief, with item 17 reverse scored to demonstrate strength of belief in the need for HIV awareness-raising initiatives in 2016. Item 18 was also reverse scored to represent strength of accuracy of knowledge of blood-borne HIV transmission.

Table 1

*Means and standard deviations of instrument items by age group with Cronbach  $\alpha$* 

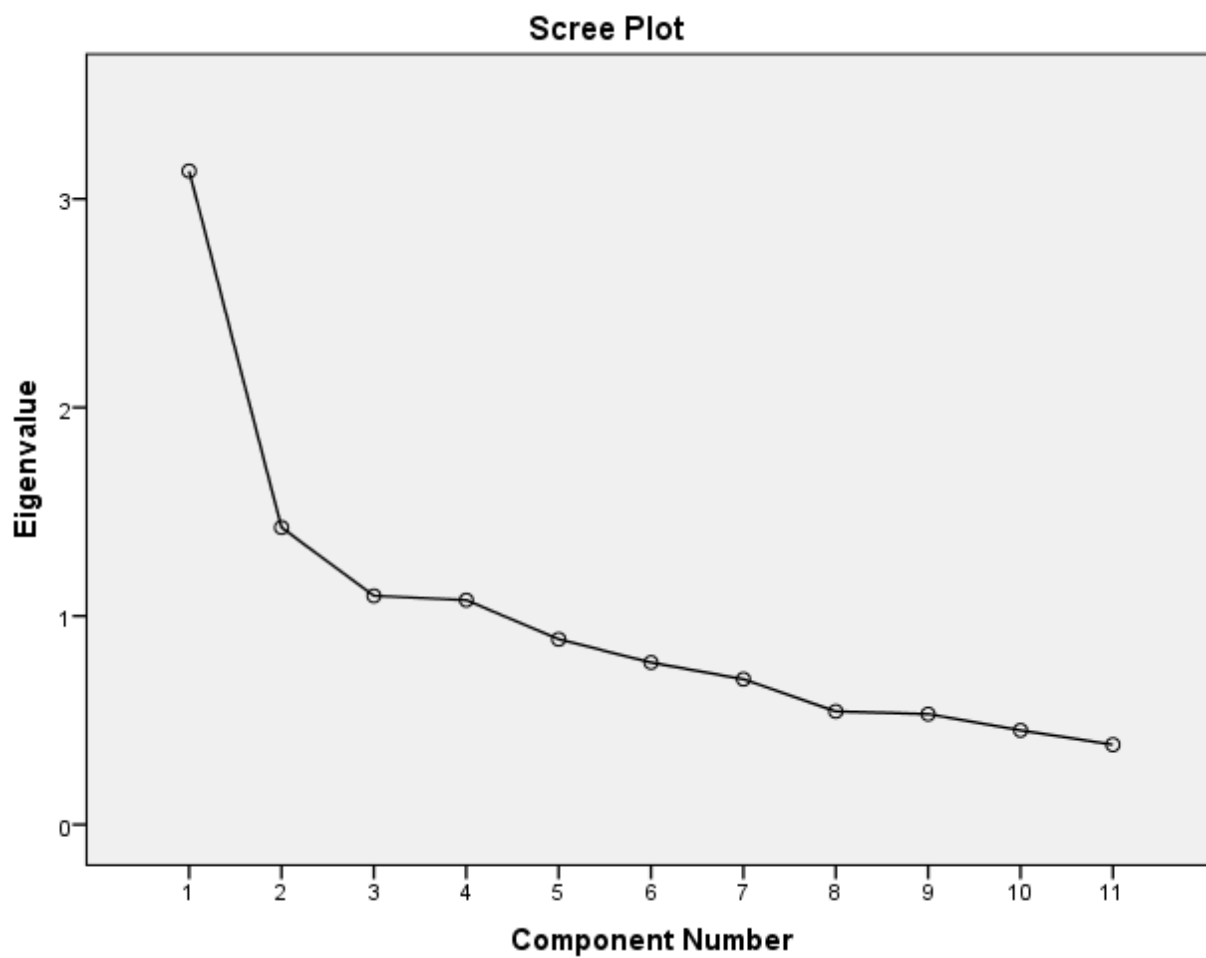
Item	Under 25 (n=38)	26-35 (n=17)	36-45 (n=16)	46-55 (n=24)	56+ (n=20)	Cronbach $\alpha$
6) Sympathy	4.11 (SD 0.73)	4.35 (SD 0.70)	4.44 (SD 0.73)	<b>4.54</b> (SD 0.59)	4.45 (SD 0.76)	.71
7) Blame	<b>1.95</b> (SD 0.57)	1.71 (SD 0.59)	1.56 (SD 0.81)	1.71 (SD 0.75)	1.50 (SD 0.51)	.71
8) Happy relationship with HIV+	2.50 (SD 0.86)	2.76 (SD 0.75)	2.75 (SD 0.93)	2.96 (SD 0.86)	<b>3.05</b> (SD 1.00)	.71
9) Prevention of health professionals	<b>2.34</b> (SD 1.05)	2.06 (SD 0.90)	1.69 (SD 0.87)	1.79 (SD 0.59)	1.85 (SD 0.59)	.71
10) Shame	<b>3.18</b> (SD 1.14)	2.76 (SD 1.09)	2.88 (SD 1.09)	2.46 (SD 0.93)	2.60 (SD 1.10)	.71
11) Same care	4.39 (SD 0.76)	4.65 (SD 0.79)	4.75 (SD 0.45)	4.67 (SD 0.48)	<b>4.80</b> (SD 0.41)	.72
13) Shock	<b>3.97</b> (SD 0.55)	3.35 (SD 1.12)	3.38 (SD 0.89)	2.88 (SD 1.12)	2.30 (SD 1.03)	.71
14) Gay Community too relaxed	<b>2.61</b> (SD 0.82)	2.12 (SD 0.86)	2.56 (SD 0.96)	2.58 (SD 0.58)	2.45 (SD 0.76)	.73
16) Fear and stigma	3.84 (SD 0.79)	3.76 (SD 1.03)	4.00 (SD 0.97)	4.04 (SD 0.81)	<b>4.45</b> (SD 0.61)	.73
17) Initiatives in 2016	4.18 (SD 0.63)	4.41 (SD 0.61)	<b>4.56</b> (SD 0.63)	4.46 (SD 0.59)	4.50 (SD 0.51)	.72
18) Blood	4.18 (SD 1.22)	3.94 (SD 1.71)	<b>4.75</b> (SD 0.45)	4.63 (SD 0.58)	4.55 (SD 0.76)	.73
19) Condom protection	4.05 (SD 0.80)	4.24 (SD 0.83)	<b>4.81</b> (SD 0.40)	4.25 (SD 0.85)	4.50 (SD 0.51)	.72
21) Saliva	2.61 (SD 1.03)	2.24 (SD 0.97)	2.06 (SD 1.24)	2.29 (SD 1.00)	<b>2.65</b> (SD 1.14)	.74
23) Public health	3.45 (SD 0.89)	3.18 (SD 0.88)	<b>4.25</b> (SD 0.68)	3.63 (SD 0.88)	3.50 (SD 1.10)	.74

## Factor Analysis

Data suitability was assessed prior to performing principal components analysis (PCA) using SPSS version 22. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .74 and exceeded the recommended value of .6 (Kaiser, 1974). Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance ( $p < 0.001$ ), thereby supporting the factorability of the correlation matrix. PCA revealed the presence of four components with eigenvalues exceeding 1, explaining 28.49%, 12.95%, 9.97% and 9.78% of the variance respectively. An inspection of the scree plot (see Figure 1) revealed a clear break after the second factor. Using Cattell's (1966) scree test, two components were retained for further investigation. This was further supported by results of Parallel Analysis which indicated two factors with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (11 variables x 115 respondents).

The two-factor solution explained a total of 41.44% of the variance, with Component 1 contributing 28.49% and Component 2 contributing 12.95%. To aid in the interpretation of these two components, oblimin rotation was performed. The rotated solution revealed the presence of a simple structure (Thurstone, 1947), with both components showing a number of strong loadings. All variables (excluding item 23) loaded substantially on only one component. Component 1 contained negative item loadings (including items 10, 13, 14, 9 and 16) and Component 2 contained positive item loadings (including items 17, 11, 23 and 6). Interpretation of the two components was consistent with previous research concerning attitude scales, with negative items loading strongly on one component and positive items loading strongly on the other.

There was a weak positive correlation between the two factors ( $r = 0.26$ ) and two items had low communality values of less than .3 suggesting they did not fit well with other items in their respective components: item 16 '*fear and stigma*' had the lowest communality value for the two-factor solution (.18) and item 23 '*health information*' the second lowest (.25). They were subsequently removed from the attitude measure and grouped with items 12, 15 and 17 to form a measure of belief, for which a maximum score of 25 indicated strength of belief for HIV education/ information. Overall the attitudinal measure incorporated items six to 14 of the questionnaire (excluding item 12) and had a possible total score of 40 which represented a positive attitude to HIV. The PCA derived two components of attitudes to HIV and eight items formed a two-factor attitudinal measure of positive/negative attitudes and beliefs. The pattern and structure matrix for PCA with oblimin rotation of a two factor solution of HIV attitude items is presented in Table 2.



*Figure 1. Scree Plot of HIV Items*

Principal components analysis of HIV items demonstrated a break after the second factor. Two components were retained as the eigenvalues exceeded the criterion values for the data matrix.

Table 2

*Pattern and Structure Matrix for Principal Components Analysis with Oblimin Rotation of Two Factor Solution of HIV Items*

Item	Pattern coefficients		Structure coefficients		Communalities
	Component 1	Component 2	Component 1	Component 2	
10) Shame	<b>0.80</b>	-0.14	<b>0.76</b>	0.07	0.60
13) Shock	<b>0.73</b>	-0.05	<b>0.74</b>	0.24	0.55
8) Happy to have relationship with HIV+	<b>0.60</b>	0.16	<b>0.64</b>	<b>0.31</b>	0.43
14) Gay community too relaxed	<b>0.56</b>	-0.03	<b>0.55</b>	0.12	0.30
9) Prevention of HIV+ health professionals	<b>0.51</b>	0.12	<b>0.54</b>	0.25	0.30
16) Fear and stigma	<b>0.44</b>	-0.06	<b>0.42</b>	0.05	0.18
7) Blame	0.12	<b>0.76</b>	<b>0.32</b>	<b>0.79</b>	0.64
17) Initiatives	0.01	<b>0.64</b>	0.17	<b>0.64</b>	0.41
11) Same care	-0.01	<b>0.64</b>	0.16	<b>0.64</b>	0.41
23) Information reduces transmission	-0.11	<b>0.52</b>	0.03	<b>0.49</b>	0.25
6) Sympathy	<b>0.36</b>	<b>0.51</b>	<b>0.49</b>	<b>0.60</b>	0.49

*Note.* Major loadings for each item are shown in bold.



Tables 3 - 7 present the means and standard deviations for the HIV measures according to age group, gender, sexual orientation, education level and self-reported HIV awareness. Each questionnaire item had a maximum score of five which represented a positive attitude, strong belief and accurate knowledge of transmission.

Table 3

*Means/ standard deviations by age group for all HIV measures*

Age Group	HIV Attitude	HIV Belief	HIV Knowledge	N
25 & under	3.37 ( <i>SD</i> 0.42)	3.31 ( <i>SD</i> 0.39)	3.54 ( <i>SD</i> 0.46)	38
26 - 35	3.72 ( <i>SD</i> 0.43)	3.31 ( <i>SD</i> 0.45)	3.65 ( <i>SD</i> 0.53)	17
36 - 45	3.73 ( <i>SD</i> 0.46)	<b>3.57</b> ( <i>SD</i> 0.33)	<b>3.93</b> ( <i>SD</i> 0.31)	16
46 - 55	3.84 ( <i>SD</i> 0.42)	3.55 ( <i>SD</i> 0.27)	3.77 ( <i>SD</i> 0.51)	24
56 & over	<b>3.95</b> ( <i>SD</i> 0.59)	3.56 ( <i>SD</i> 0.33)	3.59 ( <i>SD</i> 0.40)	20
All ages	3.67 ( <i>SD</i> 0.51)	3.44 ( <i>SD</i> 0.38)	3.67 ( <i>SD</i> 0.47)	115

*Note.* Highest mean scores by age group are shown in bold; *SD* = Standard deviation

The mean scores by age group for the HIV measures are provided in Table 3. Each questionnaire item had a maximum score of five which represented a positive attitude, strong belief and accurate knowledge of transmission.

Table 4

*Means/ standard deviations by gender for all HIV measures*

Gender	HIV Attitude	HIV Belief	HIV Knowledge	N
Male	<b>3.73</b> (SD 0.53)	<b>3.44</b> (SD 0.44)	3.64 (SD 0.54)	38
Female	3.64 (SD 0.50)	<b>3.44</b> (SD 0.34)	<b>3.68</b> (SD 0.43)	77

*Note.* Highest mean scores by gender are shown in bold; SD = Standard deviation

The mean scores by gender for the HIV measures are provided in Table 4. Each questionnaire item had a maximum score of five which represented a positive attitude, strong belief and accurate knowledge of transmission.

Table 5

*Means/ standard deviations by sexual orientation for all HIV measures*

Sexual Orientation	HIV Attitude	HIV Belief	HIV Knowledge	N
Heterosexual	3.66 (SD 0.51)	3.44 (SD 0.38)	3.63 (SD 0.46)	102
Gay/Lesbian	3.80 (SD 0.59)	<b>3.66</b> (SD 0.36)	4.14 (SD 0.46)	7
Bisexual	3.44 (SD 0.44)	3.20 (SD 0.00)	3.80 (SD 0.00)	2
Asexual	3.50 (SD 0.00)	3.40 (SD 0.00)	<b>4.20</b> (SD 0.00)	1
Pansexual/Other	<b>4.13</b> (SD 0.18)	3.20 (SD 0.28)	3.80 (SD 0.28)	2
Rather Not Say	3.63 (SD 0.00)	3.40 (SD 0.00)	3.40 (SD 0.00)	1

*Note.* Highest mean scores by sexual orientation are shown in bold; SD = Standard deviation

The mean scores by sexual orientation for the HIV measures are provided in Table 5. Each questionnaire item had a maximum score of five which represented a positive attitude, strong belief and accurate knowledge of transmission.

Table 6

*Means/ standard deviations by education for all HIV measures*

Education Level	HIV Attitude	HIV Belief	HIV Knowledge	N
GCSE	3.67 ( <i>SD</i> 0.38)	<b>3.80</b> ( <i>SD</i> 0.22)	3.60 ( <i>SD</i> 0.66)	6
A' Level	3.53 ( <i>SD</i> 0.48)	3.30 ( <i>SD</i> 0.14)	3.46 ( <i>SD</i> 0.30)	10
Vocational	3.70 ( <i>SD</i> 0.64)	3.53 ( <i>SD</i> 0.36)	3.72 ( <i>SD</i> 0.47)	12
Undergraduate	3.53 ( <i>SD</i> 0.50)	3.42 ( <i>SD</i> 0.40)	3.62 ( <i>SD</i> 0.47)	45
Postgraduate	<b>3.85</b> ( <i>SD</i> 0.47)	3.41 ( <i>SD</i> 0.39)	<b>3.76</b> ( <i>SD</i> 0.46)	42

*Note.* Highest mean scores by education level are shown in bold; *SD* = Standard deviation

The mean scores by education for the HIV measures are provided in Table 6. Each questionnaire item had a maximum score of five which represented a positive attitude, strong belief and accurate knowledge of transmission.

Table 7

*Means and standard deviations by HIV awareness for all HIV measures*

Awareness	HIV Attitude	HIV Belief	HIV Knowledge	N
Very Aware	<b>3.94</b> ( <i>SD</i> 0.53)	<b>3.49</b> ( <i>SD</i> 0.39)	<b>3.75</b> ( <i>SD</i> 0.55)	27
Fairly Aware	3.60 ( <i>SD</i> 0.47)	3.42 ( <i>SD</i> 0.37)	3.65 ( <i>SD</i> 0.44)	83
Unaware	3.35 ( <i>SD</i> 0.60)	3.52 ( <i>SD</i> 0.42)	3.48 ( <i>SD</i> 0.44)	5

*Note.* Highest mean scores by HIV awareness are shown in bold; *SD* = Standard deviation

The mean scores by HIV awareness for the HIV measures are provided in Table 7. Each questionnaire item had a maximum score of five which represented a positive attitude, strong belief and accurate knowledge of transmission.

### Correlational Analysis

Table 8 presents the correlational results for the independent variables (IVs) in relation to the dependent variables (DVs).

Table 8

*Correlations for Age, Gender, Sexual Orientation, Education Level and HIV Awareness in relation to Measures of HIV Attitudes, HIV Beliefs and HIV Knowledge*

Variable	Attitude Measure	Belief Measure	Knowledge Measure
Attitude Measure	—	0.29**	0.25**
Belief Measure	0.29**	—	0.20*
Knowledge Measure	0.25**	0.20*	—
Age	0.42**	0.30**	0.12
Gender	-0.08	0.01	0.04
Sexual Orientation	0.06	-0.05	0.12
Education Level	0.15	-0.12	0.14
HIV Awareness	0.31**	0.04	0.12

\*\* Correlation significant at the 0.01 level (2-tailed)

\* Correlation significant at the 0.05 level (2-tailed)

The *R* matrix presents a significant correlation between the attitude measure and age ( $r = 0.42$ ,  $N = 115$ ,  $p < 0.01$ ) with the correlation coefficient suggesting a moderate positive relationship between the two. As such, an association was suggested with increased positive attitudes to HIV by older participants. There was also a significant correlation between age and the belief measure ( $r = 0.30$ ,  $N = 115$ ,  $p < 0.01$ ) with the correlation coefficient indicating a weak to moderate positive relationship between increasing age and strength of belief. However, the main effect of age on the knowledge measure was not found to be significant ( $r = 0.12$ ,  $N = 115$ ,  $p = 0.20$ ).

A significant correlation was observed between the attitude measure and self-reported HIV awareness ( $r = 0.31$ ,  $N = 115$ ,  $p < 0.01$ ) with the correlation coefficient indicating a moderate positive relationship between increasing levels of HIV awareness and positive attitudes towards HIV. However, the main effect of self-reported HIV awareness was not found to be significant on the belief measure ( $r = 0.04$ ,  $N = 115$ ,  $p = 0.65$ ) or the knowledge measure ( $r = 0.12$ ,  $N = 115$ ,  $p = 0.20$ ).

Significant correlations were observed between the attitude and belief measures ( $r = 0.29$ ,  $N = 115$ ,  $p < 0.01$ ), the attitude and knowledge measures ( $r = 0.25$ ,  $N = 115$ ,  $p < 0.01$ ) and the belief and knowledge measures ( $r = 0.20$ ,  $N = 115$ ,  $p < 0.05$ ) with correlation coefficients suggesting weak to moderate positive relationships between the three.

Correlation coefficients were calculated by age group (see 'Inferential Statistics' folder, Appendix H) with two significant findings: a moderate positive correlation between participants aged 25 and under with the attitude and knowledge measures ( $r = 0.33$ ,  $N = 38$ ,  $p < 0.05$ ) and a moderate positive correlation between participants aged 56 and over with the belief and knowledge measures ( $r = 0.55$ ,  $N = 20$ ,  $p < 0.05$ ). A significant correlation was observed

between age and gender ( $r = -0.27$ ,  $N = 115$ ,  $p < 0.01$ ) with the correlation coefficient presenting a weak to moderate negative relationship between the two. This was due to females being younger than males and two-fold in number within the study. However, the main effects of gender were not found to be significant on the three measures: gender/ attitude measure ( $r = -0.08$ ,  $N = 115$ ,  $p = 0.38$ ); gender/ belief measure ( $r = 0.01$ ,  $N = 115$ ,  $p = 0.95$ ); gender/ knowledge measure ( $r = 0.04$ ,  $N = 115$ ,  $p = 0.64$ ).

The main effects of sexual orientation and education were not found to be significant on the three measures: sexual orientation/ attitude measure ( $r = 0.06$ ,  $N = 115$ ,  $p = 0.51$ ); education/ attitude measure ( $r = 0.15$ ,  $N = 115$ ,  $p = 0.11$ ); sexual orientation/ belief measure ( $r = -0.05$ ,  $N = 115$ ,  $p = 0.61$ ); education/ belief measure ( $r = -0.12$ ,  $N = 115$ ,  $p = 0.20$ ); sexual orientation/ knowledge measure ( $r = 0.12$ ,  $N = 115$ ,  $p = 0.20$ ); education/ knowledge measure ( $r = 0.14$ ,  $N = 115$ ,  $p = 0.13$ ).

### Multiple Regression Analysis

Inspection of tolerance and variance inflation factor (VIF) statistics and scatter and probability plots (see Appendix G) ensured the assumptions of normality, linearity, multicollinearity and homoscedasticity were not violated. Dependent variable data concerning HIV attitudes, beliefs and knowledge was entered into a standard multiple regression analysis together with independent variable data of age and self-reported levels of HIV awareness. The variables of gender, sexual orientation and education levels were not considered for further analysis due to the lack of significant correlations among these demographics.

Overall the model predicted a significant amount of variance (28.5% adjusted to 26%) in explaining attitudes towards HIV ( $F(4, 110) = 10.94, p < 0.001$ ) and examination of the probability-plot line of best-fit demonstrated a strong, positive relationship (see Appendix G). Age ( $\beta = 0.31, t = 3.66, p < 0.001$ ) and HIV awareness ( $\beta = 0.23, t = 2.79, p < 0.05$ ) were found to be significant unique predictors of attitudes towards HIV, although HIV beliefs ( $\beta = 0.15, t = 1.73, p = 0.09$ ) and HIV knowledge ( $\beta = 0.16, t = 1.87, p = 0.06$ ) did not make significant unique contributions to the predictive model.

## Discussion

### Findings

The aim of the study was to test five hypotheses. The primary hypothesis was that there would be a non-directional correlation between age (H1) and HIV attitudes, beliefs and knowledge. The secondary hypotheses were that there would be a non-directional correlation between gender (H2) and HIV attitudes, beliefs and knowledge, a non-directional correlation between sexual orientation (H3) and HIV attitudes, beliefs and knowledge, and a positive correlation between education levels (H4) and HIV attitudes, beliefs and knowledge. The fifth hypothesis was that there would be a positive correlation between self-reported levels of HIV awareness (H5) and HIV attitudes, beliefs and knowledge. The study found a positive correlation between age and the HIV attitude measure and a positive correlation between age and the HIV belief measure. It did not, however, find a correlation between age and the HIV knowledge measure. The first (H1) hypothesis was therefore retained in terms of age and attitudes and beliefs, but rejected in relation to age and knowledge of transmission. The study also found a positive correlation between self-reported HIV awareness and the attitude measure, but not between self-reported HIV awareness and the belief or knowledge measures. As such, the fifth (H5) hypothesis was retained in terms of self-reported levels of HIV awareness and attitudes, but rejected in relation to self-reported levels of HIV and beliefs and knowledge of transmission. Positive correlations were also observed between the attitude, belief and knowledge measures which demonstrated an inter-connectedness among the instrument items.

The study found age and HIV awareness to be significant unique predictors of attitudes towards HIV. This supported associative literature on age (Hillman, 2007; Okeke, Onwasigwe & Ibegbu, 2012) and HIV awareness (Barss et al., 2009; Grulich & Kaldor, 2008; Tompkins, Smith, Jones & Swindells, 2006). However, beliefs and knowledge did not make significant contributions to



the predictive model. The null hypothesis (H0) was not rejected in favour of the second (H2), third (H3) or fourth (H4) hypothesis, as significant correlations were not found between attitudes to HIV and gender, sexual orientation or education levels. This was in contrast to literature which supported correlational associations between attitudes and gender (Dekin, 1996; Hillman, 2007), sexuality (Chong, Mak, Tam, Zhu & Chung, 2016) and education (Tompkins, Smith, Jones & Swindells, 2006), although as Cohen (1990) posits, a null hypothesis is never 'true' and its non-rejection should be met with judicious interpretation.

### **Implications**

The broader context of the survey was based on the possibility that positive or negative attitudes towards HIV, strength of belief about HIV issues and accuracy of knowledge concerning HIV transmission may have been influenced by exposure (or lack of) to the UK public health campaign of the 1980s. Although this did not form an explicit, testable feature of the study, examination of average scores for the attitude measure among the five age groups (see Table 3) demonstrated that attitudes towards HIV became increasingly positive with age, with those in the lowest age group having the most negative attitudes and those in the highest age group having the most positive attitudes. Indeed, a rise in positivity of attitude was observed incrementally by generation, with those who came of age in the mid/late 1970s and 1980s having a more positive attitude than those who reached maturity in the millennium. Although speculative, this may have been influenced by exposure to the HIV awareness campaign of the 1980s. Furthermore, lower levels of positive attitudes seen within the younger age groups would appear to support the age-related research discussed earlier (Brown et al., 2006; Godeau et al., 2008; Testa & Coleman, 2006).

The escalation of HIV is of serious concern (Montaner et al., 2006). Whilst medical advancements have undoubtedly improved the physical health of those infected in the West,

negative attitudes in the form of stigma and prejudice continue to encompass the HIV experience (Jeffries & Johnson, 2015; Wen et al., 2011). The study provided an opportunity to further explore this phenomenon. For example, the first two items of the attitude measure focused on the juxtaposed attitudes of sympathy and blame. A sympathetic attitude is one that is based on affect in terms of feelings of care and, in the case of the study, involved concern for those with HIV. Sympathy is different to benevolence which is impartial and, unlike empathy, does not engage with emotions of distress (Wispé, 1986). Likewise, attitudes of blame are based on feelings of superiority which can be used to devalue those affected by HIV. Indeed, the literature indicates that blame remains a significant feature of HIV, leading to victimisation and resulting in pessimism and shame (Rohleder, 2016). With respect to the 115 participants who took part in the study, 101 expressed sympathy in response to item 6 '*I am sympathetic towards people with HIV*'. All but one of the remaining 14 participants neither agreed nor disagreed, with the one negative response allocated to the 25 and under age group. However, as none of the participants apportioned blame in response to item 7 '*people infected by HIV only have themselves to blame*' (with 102 participants disagreeing and 13 neither agreeing nor disagreeing with the statement), the one unsympathetic attitude may have been due to response-error. Indeed, the study found strong correlations between items 6 and 7 in relation to the youngest and the oldest age groups and, as such, the blame culture associated with HIV was not evidenced by any of the age groups.

In order to connect to a broad spectrum of social psychological literature including self-identity, groups and social identity, the study explored intergenerational differences in terms of first-person and third-person attitudes towards HIV. For example, the 25 and under age group had the least positive attitude to having a relationship with someone who was HIV-positive, as well as the strongest negative attitude to HIV-related shame (see Table 1). Indeed, the two items to which the attitudes related (item 8 '*I would be happy to have a relationship with someone who*

*had HIV* and item 10 '*I would be ashamed if I had HIV*') were positively correlated within this age group. In contrast, however, those in the 56 and over age group demonstrated the most positive attitude to having a relationship with someone who was HIV-positive and a positive correlation was also found in this age group with item 6 '*I am sympathetic towards people with HIV*'. Although this appeared positive in attitude, however, the response may have been linked to 'benevolent prejudice'. Benevolent prejudice suggests that positive attitudes can be superficial due to cognitive processes which strive to maintain the inferiority of those from an 'out-group' (Valentine & McDonald, 2004). The dual process model of prejudice supports this, arguing that 'in-group' attitudes of social dominance and authoritarianism provide a basis for HIV prejudice (Duckitt, 2001).

Social identity theory (Tajfel & Turner, 1979; 1986) proposed that people have a desire for strong, positive social identities and are motivated by a superiority effect which views their 'in-group' as more important than other 'out-groups'. As such, unfavourable attitudes of those who are HIV-negative towards those who are HIV-positive may prevail because HIV poses a challenge which adversely affects society (Meyer, Whittier & Robnett, 2002). Indeed, high group identifiers (Brown, 2000) may produce in-group bias (Hogg & Turner, 1987), although the anti-discriminatory norms suggested by Allport's (1954) contact hypothesis can also serve to reduce discrimination between in-group members. Within the study, however, those in the second oldest age group of 46-55 years demonstrated the weakest negative attitude towards HIV-related shame, followed closely by those in the oldest age group of 56 and over. This suggested the findings were not influenced by a superiority effect. Indeed, within the oldest age group, shame was also correlated with item 13 '*if a family member or friend told me they had HIV I would be shocked*', for which the oldest generation expressed the lowest negative attitude.

Research suggests that many people experience conflict with self-identity and self-esteem when identifying as HIV-positive due to negative societal attitudes which can be exacerbated by lack of family or peer support (Bregman, Malik, Page, Makynen & Lindahl, 2013). Indeed, Abrams and Hogg (1988) argued that positive self-identity enhanced self-esteem and Baldwin, Carrell and Lopez (1990) posited that the attitudes of 'significant others' could nurture or damage the constructs of both. If maintenance of positive self-identity among those with HIV relies on the attitudes and non-rejection of significant others, therefore, successful disclosure of an HIV-positive status would appear to be pivotal to an individual's well-being. This issue was explored within the study, with almost 90% of those aged 25 and under indicating their agreement with item 13 '*if a family member or friend told me they had HIV I would be shocked*'. In contrast, 70% of those aged 56 and over indicated this was not the case. As shock tends to be pejorative, the finding would suggest that the attitudinal response of the younger generation might adversely affect the self-identity and self-esteem of those with HIV. However, as emotional shock is also acute, the affective function of such an attitude would be time-limited, thereby supporting the continuum model of cognitive consistency discussed earlier (Huskinson & Haddock, 2004). Furthermore, research into the self-esteem hypothesis has tended to utilise measures of global or trait self-esteem, when a more specific version - such as state self-esteem - might be more applicable to this finding (Back et al., 2009; Brown & Marshall, 2006).

Festinger's (1957) cognitive dissonance and Bem's (1972) self-perception theories can also be applied to the findings as they proposed different ways in which people might adjust their attitudes and behaviours towards those who are HIV-positive. Indeed, the application of cognitive dissonance theory to HIV helps to explain how people can change their attitudes from negative to positive. For example, public figures such as the late Princess of Wales (and latterly Prince Harry) served to reduce HIV-related stigma by demonstrating compassion towards those affected, as well as by their open support for HIV service-provision. Indeed, national attitudes

towards HIV altered favourably following Princess Diana's association with the Mildmay HIV hospice and the National Aids Trust (Brown, Basil & Bocarnea, 2003). Likewise, self-perception theory explains how people form attitudes by observing their own behaviour, as with HIV-stigma related to homophobia, which in many cases may be due to family influence or peer pressure (Benson, 2013). Interestingly, Ajzen (2001) posited how it was possible to hold two opposing attitudes at the same time. Thus, someone may see HIV infection transmitted by MSM as justifiable but would not apply the same judgement to those infected by blood transfusion.

Attitudes towards MSM and HIV were explored in response to item 14 '*the gay community is too relaxed about HIV*'. Whilst the statement was somewhat ambiguous in context (i.e. not indicating whether this was in relation to HIV transmission or lack of involvement in awareness-raising initiatives), those in the lowest age group demonstrated the strongest negative attitude among the five generations. Responses within this age group were positively correlated with item 9 '*health professionals with HIV should be prevented from working with the public*' and Table 1 shows average responses were also most negative among those aged 25 and under. In contrast, however, those in the 26-35 year age group had the lowest negative attitudes amongst the generations. Although conjecture, it could be argued that participants in this age range were more positive about MSM due to legal and societal changes that had taken place during their formative years - as with the introduction of civil partnerships and same-sex marriages. As such, this may have engendered a more accepting attitude towards MSM/ HIV based on diversity and equality of opportunity among this generation (Clements & Jones, 2008; Twomey, 2003).

It is suggested that 'psychological safety' is obtained when a person engages with group identity (Solomon, Greenberg & Pyszczynski, 1991) and group-based literature provided further appreciation for the dimensions of the study. For example, 'common fate' and 'similarity' cues (Campbell, 1958) can be applied to HIV, as group entitativity is distinct, with infection providing

inter-connectedness among 'members'. Lickel et al. (2000) found that group membership was most valued when group entitativity was high, although group membership which was enforced often resulted in poor psychological health (Sutton & Douglas, 2013). As a positive HIV status is determined by biological infection and there is (generally) no choice in deciding to join the HIV 'community' (Gross & Landers, 2008), a compromised sense of well-being can therefore occur among those infected, not least of all due to the attitudes of others (Iwasaki & Ristock, 2007). As such, a literature review exploring the psychological health of PLWH found that low self-worth and poor mental health were significantly associated with prejudicial attitudes of discrimination, which in turn had an adverse effect on prevention and treatment programmes (Collins, Holman, Freeman & Patel, 2006).

Positive self and social-identity plays a crucial role in the maintenance of health and well-being among those who are HIV-positive (Meyer & Northridge, 2007). Experienced and expressed self-identity changes according to social context (Morf & Koole, 2012) and when a person discloses an HIV-positive status, self-confidence relies largely on the attitudinal response of those to whom the disclosure is being made (Chernin & Johnson, 2003; Walters & Simoni, 1993). Individuals with HIV may therefore be more comfortable disclosing a positive status to those who are also HIV-positive, as social facilitation can be achieved without fear of negative attitude or consequence (Zajonc, 1965). Such research had important implications for the study, as item 12 captured participant belief concerning the criminalisation of HIV via the statement '*not disclosing a positive HIV status to a sexual partner should be treated as a criminal offence*'. Although the measure demonstrated a low level of internal consistency (Pallant, 2013), there was consensus of agreement among all age groups, with those aged 25 and under being the most assured in their strength of belief.

The threat of criminal prosecution for the non-disclosure of a positive HIV status has a number of social and public health implications which may impact on the growth of negative attitudes towards HIV (Weait, 2007). Indeed, criminalisation of transmission has cast a shadow over attempts to improve attitudes to HIV, negatively affecting both self and social identities (Jensen, 2002). Criminal prosecutions have been brought using Section 20 of the 1861 'Offences Against the Person Act', with individuals convicted of grievous bodily harm following the transmission of HIV via unprotected sexual intercourse (Worth, Patton & McGehee, 2005). Research suggests that the criminalisation of HIV transmission diminishes the public health message about the mutual responsibility of partners to prevent HIV infection (Galletly & Pinkerton, 2006). As UK law is based on a model of perpetrator and victim - in which only one person is perceived culpable - the terms 'victim' and 'blame' have thus dominated HIV discourse and news coverage of criminal prosecutions in the UK have been melodramatic (Persson & Newman, 2008). Indeed, those with HIV have been demonised by headlines such as 'AIDS assassins' (Lowbury & Kinghorn, 2006, p.666) and 'HIV predator' (Wilkie, 2010) and there appears to have been little consideration for the broader issues and difficulties that are involved in disclosing a positive HIV status.

Intergenerational differences were also found within the study in relation to beliefs about the need for educational initiatives and their success in reducing HIV transmission and stigma. Stronger beliefs were observed among those in the three age groups above the age of 35, which contrasted with average belief scores found among those under the age of 36. Indeed, the two age groups under 36 years had the same average scores, demonstrating weaker beliefs in the efficacy of health promotion initiatives in reducing HIV transmission and addressing HIV-related stigma, or of the need for awareness-raising campaigns in 2016. Although not substantiated, such a finding may have been influenced by a lack of exposure to the UK public health campaign of the 1980s. The observed disparity among attitudes and beliefs of older and

younger generations was specifically observed within the belief measure in response to item 15 '*older people are more concerned about HIV than younger people*'. Of the 29% who agreed with the statement, 58% were aged 36 years and over and 42% were aged 35 years and under, demonstrating that older generations considered themselves more concerned about HIV than younger generations. Whilst the finding was of note, however, the pattern must be located within the context of the total population, for whom the majority neither agreed nor disagreed with the statement.

Participant responses to knowledge-based items were wide-ranging. In terms of understanding HIV infection routes, those in the 36-45 year age group (who were born in the 1970s and came of age in the late 1980s / early 1990s) were found to have the most accurate knowledge of HIV transmission. It could be suggested that the finding demonstrated support for the broader context of the study, as two major occurrences in the UK HIV experience - the 1980s 'tip of the iceberg' campaign and the discovery and development of ART in the 1990s - may have exposed a generation of adolescents and young adults to information not seen among other age groups. However, as participants were not asked whether they had experienced the 1980s HIV campaign, such argument would be based on conjecture. In addition, those in the 36-45 year age group formed the smallest generational cohort (n=16) within the study, with the average range of scores being more limited than those of other generations, such as the 25 and under age group (n=38).

Correlational analysis of item 18 '*HIV cannot be transmitted by blood transfusion or the sharing of needles*' revealed two significant relationships between the responses of older participants. The response among those aged 56 and above was positively correlated with the belief in item 23 '*public health information always helps to reduce HIV transmission rates*'. As such, an association between accuracy of knowledge concerning transmission and provision of HIV



information supported the literature on the benefits of HIV education (Barss et al., 2009; Tompkins, Smith, Jones & Swindells, 2006). Likewise, a correlation among those aged 46-55 years between item 18 and item 7 '*people infected by HIV only have themselves to blame*' suggested an association between accurate knowledge of transmission and positive attitudes to HIV in terms of lack of blame.

A final and important implication of the study was the association between self-reported levels of HIV awareness in terms of age and the three measures. The majority of participants indicated a 'fair' level of awareness (n=83) before responding to items in the questionnaire (see Table 7). Those who indicated a high level of awareness (n=27) had the most positive attitudes, the strongest beliefs and the most accurate knowledge of HIV transmission. This suggested the three measures were connected to participant self-perception of levels of HIV awareness. In terms of age, there was a fairly even spread of scores of self-reported levels of awareness across the five generations (see Appendix H, 'Descriptive Statistics' folder, HIV awareness cross-tabulation data), with the majority of those indicating 'fairly aware' being aged 25 and under. However, had the item been placed at the end of the questionnaire a different response may have been established due to priming (Reeder & Pryor, 2000, as cited in Maio & Olson, 2000). As such, this demonstrated the complexity of designing an instrument for accurately measuring participant views on HIV.

### **Limitations**

Attention must be given to any confounds which may have affected the results of the study. For example, as the (H1) and (H5) were retained, Type I errors may have occurred (Dancey & Reidy, 2004). Likewise, as correlational associations can be spurious (Clark-Carter, 2003), magnitude of power and effect must also be examined. As the sample was sufficient in size, the probability of sampling error was unlikely. In this case, however, the sample was

disproportionately female, thus it would not be possible to generalise the findings to the wider population. Although not significant, it was nonetheless interesting to note that attitudes to HIV were slightly more positive among males than among females (see Table 4). Interestingly, however, females were slightly more accurate in their knowledge of HIV transmission than males, suggesting that a better knowledge of the means of contracting HIV did not translate to a more positive attitude to HIV-related issues.

The sample population was skewed as the majority of participants were educated to degree level or above (see Table 6). Likewise, the number of participants who identified a sexual orientation as being other than heterosexual was very small (see Table 5). Although neither of these demographic variables produced a significant result in relation to the three HIV measures, a broader cross-section of data may have demonstrated otherwise. Likewise, although the age of participants was wide-ranging, the grouping of age into five generations may have reduced statistical specificity within the findings (see Table 3). In addition, as participants were not asked to indicate whether they had direct experience or memory of the 'tip of the iceberg' campaign, potentially useful data for the broader context of the study was not captured.

A number of the items lacked validity due to the questionnaire's untested hypothetical construction (Kenrick & Keefe, 1984). Indeed, items grouped to form the belief measure did not attain acceptable levels of reliability. Internal consistency of items therefore required refining for homogeneity using Cronbach's alpha. As such, pilot testing and fine tuning of the measurement processes may have better evidenced positive and negative findings towards HIV. In addition, although multiple regression analysis of the data suggested a link between attitudes, age and self-reported HIV awareness levels, potential predictors of attitudes cover a broad spectrum and other factors could have been introduced into the study. For example, inclusion of personality types and attitudes to HIV may have provided additional, divergent information for discussion

(Ajzen, 2005), despite mixed consensus concerning personality trait consistency (Allen, 2006). Likewise, attitudes to HIV may be influenced by socio-economic status, an additional variable for which this particular study did not consider. Indeed, a large study (N=2,933) exploring negative attitudes to HIV and socio-economic status in Tanzania found an association between poverty and HIV-related stigma in the form of the belief that HIV was punishment for immoral behaviour (Amuri, Mitchell, Cockcroft & Andersson, 2011).

The ease of distribution and cost-effectiveness of the methodology was beneficial to the study (Goldstein & Hersen, 2000). However, as in all cases of self-report methodology, subjectivity and bias must be taken into account. For example, social desirability bias maintains that individuals differ in honesty of response with regard to questionnaires and surveys as they wish to be perceived favourably - either internally or within wider society (Miller, 2012; Robinson, Shaver & Wrightsman, 1991). This is problematic when measuring individual differences in attitudes as it can lead to the over or underestimation of averages, which can occur in opposing directions (Stone & NetLibrary, 2000). Likewise, the influence of researcher-bias must also be considered in relation to reflexivity and epistemology of approach, both of which underpinned the construction and implementation of the study.

The time and location in which questionnaires were undertaken may have affected the outcome of the results and the extent to which participant attitudes were influenced by social or environmental circumstance is likely to have varied in strength and magnitude (Brace & Market Research Society, 2013). For example, self-reported attitudes could have been heightened by unique life experience which, in turn, may have influenced associations with the independent variables under scrutiny. Indeed, given the sensitive nature of the study an element of self-reporting anxiety may have occurred due to reasoned action (Ajzen & Fishbein, 1980). As a consequence, differences in attitudes cannot be fully represented via patterns and trends

correlated with response averages, thus the full detail of attitudinal difference remains unquantifiable (Ellis, Abrams, Abrams, Nussbaum & Frey, 2009).

## **Conclusion**

The aim of the study was to explore intergenerational attitudes towards HIV in relation to beliefs, self-reported levels of awareness and knowledge of transmission. A number of interesting relationships were found and it would appear that attitudinal associations with age have important implications for the reduction of HIV-related stigma. Public health initiatives that have had a positive impact on HIV-related stigma have not been forthcoming (Kirby, Laris & Rolleri, 2007; Warriner, 2014) and it has been argued that awareness-raising campaigns have been too general, not focusing on the needs of different generations (Chandler, 2011). Targeted awareness-raising of different age groups is therefore required to address underlying factors that influence HIV-related stigma and research must embrace the multi-dimensionality of the HIV experience if its associated prejudice is to be better understood.

The national HIV public health campaign of the 1980s coincided with a substantial decline in HIV diagnoses. However, since the late 1990s transmission rates have continued to increase and HIV-related stigma has gone unchallenged (Nicoll et al., 2001). The science exists to save lives and ART has become inexpensive and easy to take. Whilst many PLWH remain healthy, however, HIV-related disease kills nearly two million people worldwide each year. ART remains inaccessible to thousands of people and those who live in poverty or do not conform to acceptable stereotypes continue to be judged (UNAIDS, 2016). As a result, socio-psychological interventions must be employed in conjunction with pharmacological treatments if attitudes to HIV are to improve.

Moderating the impact of negative attitudes towards HIV requires collective compassion. Whilst intergenerational differences in attitudes, beliefs and knowledge may challenge the global response to HIV, preventative resources and medical treatment must be made available to all. The study explored possible links to the genesis of HIV-related stigma and proffered evidence for its reduction. As such, health promotion initiatives that encompass the affective, behavioural and cognitive mechanisms of HIV-related stigma may serve to ameliorate negative attitudes to HIV - not least of all for improving the emotional well-being of PLWH - but also for the benefit of future generations yet to be affected.

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## Appendices

### Appendix A – Questionnaire

#### Section A – ‘About You’

- 1) Gender: Male ☐ Female ☐ Other ☐
- 2) Year of Birth: *Please type the year you were born here*
- 3) Sexual Orientation: Heterosexual ☐ Gay/Lesbian ☐ Bisexual ☐  
Asexual ☐ Pansexual/Other ☐ Rather Not Say ☐
- 4) Education Level: *Please check all that apply*
- GCSE ☐ A' Level ☐ Vocational ☐  
Undergraduate ☐ Postgraduate ☐
- 5) HIV awareness: Very aware ☐ Fairly aware ☐ Unaware ☐

#### Section B – ‘What’s Your Opinion?’

- 6) I am sympathetic towards people with HIV
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐
- 7) People infected by HIV only have themselves to blame
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

8) I would be happy to have a relationship with someone who had HIV

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

9) Health professionals with HIV should be prevented from working with the public

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

10) I would be ashamed if I had HIV

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

11) People with HIV should receive as much care and understanding as those with other conditions

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

12) Not disclosing a positive HIV status to a sexual partner should be treated as a criminal offence

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

13) If a family member or friend told me they had HIV I would be shocked

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

- 14) The gay community is too relaxed about HIV
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐
- Disagree ☐ Strongly Disagree ☐
- 15) Older people are more concerned about HIV than younger people
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐
- Disagree ☐ Strongly Disagree ☐
- 16) Fear and stigma about HIV are mostly due to lack of education
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐
- Disagree ☐ Strongly Disagree ☐
- 17) HIV awareness-raising initiatives are not needed in 2016
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐
- Disagree ☐ Strongly Disagree ☐

Section C – ‘HIV Transmission & Knowledge’

- 18) HIV cannot be transmitted via blood transfusion or the sharing of needles
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐
- Disagree ☐ Strongly Disagree ☐
- 19) Condom use reduces the risk of HIV transmission during sexual intercourse
- Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐
- Disagree ☐ Strongly Disagree ☐

20) During pregnancy, HIV transmission from mother to unborn child is preventable

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

21) HIV can be transmitted via saliva

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

22) Anti-viral medication significantly reduces the risk of transmission between people who are HIV positive and HIV negative

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

23) Public health information always helps to reduce HIV transmission rates

Strongly Agree ☐ Agree ☐ Neither Agree/Disagree ☐  
Disagree ☐ Strongly Disagree ☐

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Many thanks for taking time to complete this questionnaire. Your interest is very much appreciated.

Should you require information on HIV & AIDS, please contact The National Aids Trust on 0207 814 6767 (email: [info@nat.org.uk](mailto:info@nat.org.uk)), or visit their website [www.hivaware.org.uk](http://www.hivaware.org.uk) for first class advice and support. Likewise, the Terrence Higgins Trust can provide information about how to protect yourself and others from HIV on 0808 802 1221 (email: [info@ttht.org.uk](mailto:info@ttht.org.uk)), or you can speak to your GP or hospital-based sexual health clinic for further information.



## **Appendix B – Participant Information Sheet**



### **An investigation into intergenerational attitudes towards HIV & AIDS**

This survey-based study involves completion of a questionnaire to see whether or not age, sexual orientation and exposure to different awareness-raising initiatives have an effect on current attitudes to HIV & AIDS. Participation is voluntary and open to anyone aged 16 and over.

The questionnaire takes 10-15 minutes to complete and by taking part you are assisting in valuable research for my MSc in Psychology, for which I am very grateful. The questionnaire is not being used as a diagnostic tool and, should the findings be published, data confidentiality is guaranteed and participants will remain non-identifiable.

There are no risks in taking part, but you may find some of the questions difficult to answer. If so, you can choose to omit responses if necessary. Please be assured your answers will not be judged in terms of 'rightness' - the more honest you can be, the better the research.

Partially completed questionnaires will not be included in the report and you can withdraw from the process up to the point of submission. Submission of a completed questionnaire implies informed consent for inclusion.

Please email 'What's Your Opinion?' to (student name) at [918320885@chester.ac.uk](mailto:918320885@chester.ac.uk) to receive a questionnaire (a paper copy can be provided if preferred). If you are a psychology student, please register via the research participation system (RPS) and undertake the 'What's Your Opinion?' study to obtain RPS credits for your own research. The research supervisor is Dr Liane Hayes who can be contacted by e-mail at [l.hayes@chester.ac.uk](mailto:l.hayes@chester.ac.uk) if you have any additional questions.

Following completion of the questionnaire, should you require further advice on HIV & AIDS please contact The National Aids Trust on 0207 814 6767 (email: [info@nat.org.uk](mailto:info@nat.org.uk)), or visit their website [www.hivaware.org.uk](http://www.hivaware.org.uk) for accurate information.

If you are worried you may be at risk of HIV - or want information about how to protect yourself and others - please contact the Terrence Higgins Trust on 0808 802 1221 (email: [info@tht.org.uk](mailto:info@tht.org.uk)), or speak to your GP or hospital-based sexual health clinic for further support.

### **Appendix C – Participant E-mail Invitation**

Subject: *What's Your Opinion? An investigation into intergenerational attitudes towards HIV & AIDS*

As part of my MSc in Psychology I am carrying out research into current attitudes towards HIV & AIDS in relation to age, sexual orientation and health promotion initiatives. As such, I would be extremely grateful if you would answer the attached questionnaire and return it to me at this email address [918320885@chester.ac.uk](mailto:918320885@chester.ac.uk) by 31<sup>st</sup> May 2016.

The questionnaire is non-diagnostic and participation is voluntary. It is open to anyone aged 16 and over and takes 10-15 minutes to complete. Partially completed questionnaires will not be included and you can withdraw from the process at any time.

You may find some of the questions a bit challenging and can omit responses if necessary. However, your answers will not be judged in terms of 'rightness' and the more honest you can be, the better the research.

In order to maintain data confidentiality, your reply will be deleted following detachment of the completed questionnaire. Please note that submission implies you have provided informed consent.

Thank you for your time and support.

With kind regards,

(Student Name)

*My research supervisor is Dr Liane Hayes who can be contacted by e-mail at [l.hayes@chester.ac.uk](mailto:l.hayes@chester.ac.uk) should you have any additional questions. If you require further advice on HIV & AIDS, please contact The National Aids Trust on 0207 814 6767 (email: [info@nat.org.uk](mailto:info@nat.org.uk)) or visit their website [www.hivaware.org.uk](http://www.hivaware.org.uk) for more information. If you are worried you may be at risk of HIV - or want information about how to protect yourself and others - please contact the Terrence Higgins Trust on 0808 802 1221 (email: [info@tht.org.uk](mailto:info@tht.org.uk)), or speak to your GP or hospital-based sexual health clinic for further support.*

## **Appendix D – Verbal Script: Face-to-Face Participant Recruitment**

*“Hello, I wonder if you would help me with some research I’m conducting as part of my MSc in Psychology? I’ll only take a minute or two of your time.”*

Reply (yes/no). If ‘no’, thank potential participant and cease questioning. If ‘yes’, move to next paragraph:

*“I’m interested in finding out about current attitudes towards HIV & AIDS in relation to age, sexual orientation and health promotion initiatives and would be really grateful if you would answer some questions for me?”*

If ‘yes’, show questionnaire and explain it can be done now or later. If ‘later’, explain methods of submission (being either email or collection by hand, with time/date/venue for collection) then continue to next paragraph:

*“The questionnaire isn’t a diagnostic tool and participation is voluntary. It’s open to anyone aged 16 and over and only takes 10-15 minutes to complete. You may find some of the questions a bit challenging and can omit responses if necessary. However, your answers won’t be judged in terms of their ‘rightness’ - the more honest you can be, the better the research.*

Allow for discussion/further questions and state the following:

*“You can stop at any point and partially completed questionnaires won’t be included in the research.”*

Also explain:

*“Submitting a completed questionnaire implies you have provided informed consent. Data confidentiality will be maintained at all times and all questionnaires remain anonymous”.*

Once submission has been arranged and/or completed, thank participant for their time and provide written information including contact details and signposting (as below):

*My research supervisor is Dr Liane Hayes who can be contacted by e-mail at [l.hayes@chester.ac.uk](mailto:l.hayes@chester.ac.uk) should you have any additional questions. If you require further advice on HIV & AIDS, please contact The National Aids Trust on 0207 814 6767 (email: [info@nat.org.uk](mailto:info@nat.org.uk)) or visit their website [www.hivaware.org.uk](http://www.hivaware.org.uk) for more information. If you are worried you may be at risk of HIV - or want information about how to protect yourself and others - please contact the Terrence Higgins Trust on 0808 802 1221 (email: [info@tht.org.uk](mailto:info@tht.org.uk)), or speak to your GP or hospital-based sexual health clinic for further support.*

## Appendix E – Ethics Application & Review Form



University of  
Chester

UNIVERSITY OF CHESTER,  
DEPARTMENT OF PSYCHOLOGY  
APPLICATION FOR ETHICAL APPROVAL

**WORKING TITLE:** *An Investigation of Intergenerational Attitudes to HIV & AIDS*

### A. Applicant & Personnel

#### Applicant:

Email: 918320885@chester.ac.uk Tel:

**Applicant status:** Staff ☐ Postgraduate Research ☐ Postgraduate Taught ☒ Undergraduate ☐ Module Number: PS7112

**Supervisor, if applicant is a student:** Dr Liane Hayes Email: l.hayes@chester.ac.uk

Additional personnel 1: *Click here to enter text.*

Email: *Click here to enter text.*

Role: *Click here to enter text.*

Tel: *Click here to enter text.*

Additional personnel 2: *Click here to enter text.*

Email: *Click here to enter text.*

Role: *Click here to enter text.*

Tel: *Click here to enter text.*

[Attach details of any additional personnel](#)

### B. SUBMISSION TYPE

#### 1. What is the submission type?

☒ **First submission to this or any other committee**

☐ **Resubmission of a rejected application by this committee** → [Attach previous submission](#)

↳ Summarise the changes made to the application since it was last considered by this committee, with reference to the committee's comments: *Click here to enter text.*

☐ **First submission to this committee; has been submitted to another committee.**

↳ Give details of the previous submission. Include committee name, date of submission and outcome. *Click here to enter text.* → [Attach previous submission](#) → Go to Section C

☐ **Revised submission intended to replace an application approved by this committee**

↳ Give details of the previous submission date and any changes that have been made. → [Attach previous submission](#) *Click here to enter text.*

### C. FUNDING

#### 2. Is the project subject to external funding?

☒ No → Go to Section D

☐ Yes → Is funding secured? ☐ No → Provide details: *Click here to enter text.*

☐ Yes Funding body and mailing address: *Click here to enter text.*

Grant number, if applicable: *Click here to enter text.*

Named PI: *Click here to enter text.*

## D. NATURE OF RESEARCH

### 3. Are you a member of staff applying for approval for a student related research exercise?

☒ No → Go to Section E      ☐ Yes → Module code and name [Click here to enter text.](#)

i. Will the student/s be collecting data unsupervised and outside of lecture/lab time      ☐ No → Go to Section E

## E. RESEARCH PLAN & METHODOLOGY

***Provide a detailed description of the proposed research. You should expect to write a paragraph on each section. Please note that there is a requirement to show that the project is well formulated in terms of drawing on relevant literature and is methodologically, analytically and scientifically sound.***

4. **Rationale/background** (theoretical justification for conducting the research): This research dissertation will seek to examine key indicators of attitude change towards HIV among three generations of participants (as determined by age), proposing that age and subsequent exposure (or lack of) to HIV awareness-raising initiatives - including health promotion and media campaigns - may influence attitudes to HIV infection in terms of acceptance, sympathy, stigma, prejudice and discrimination (Mason, Carlisle, Watkins & Whitehead, 2001). In addition, attitudes toward HIV in relation to issues of self-identity (Baumgartner, 2007), self-respect and self/public disclosure (Adam et al., 2015) will also be investigated.
  
5. **Aims and objectives** (expected and desired outcomes of the research; expected impact of the research): In wealthy countries, social and epidemiological contexts surrounding HIV and AIDS have changed profoundly in the last two decades (Méthy, Velter, Semaille & Bajos, 2015). Although there has been reduced social pressure for heterosexual conformity during the last forty years (Warren, 2003) - and with it a change in attitude toward homosexuality - the genesis of HIV in the 1980s profoundly influenced attitudes towards those affected by the virus and towards homosexuality in general (Friedman et al., 2013). Further AIDS-related issues, however, such as the discovery of HIV antiretroviral drugs in the 1990s (Ostrow & Kalichman, 2002) and public outrage over hate crimes committed against people with HIV (Perry, 2001) appear to have relaxed attitudes towards HIV status and issues of transmission. Or have they? Public knowledge about HIV and attitudes towards people living with the virus are a good indicator of how well society is responding to its medical and social challenges (Herek & Greene, 1995; Vermund & Leigh-Brown, 2012). Poor understanding of HIV transmission can mean increased risk of infection and, whilst targeted HIV prevention focuses on the most affected groups (gay and bisexual men and African communities in the UK), 25% of new diagnoses are among people outside of these groups (Sherr et al., 2012). Literature surrounding HIV/AIDS is widespread (Ellison, Parker, Campbell & Biosocial Society, 2003), but little focus has been given to changing intergenerational attitudes in the West due to exposure of health promotion campaigns and media influences (O'Bryan, Fishbein & Ritchey, 2004). Fear and loneliness due to meta-stereotyping (Boven & Gordijn, 2009) appears to be a prevalent phenomenon amongst those with HIV, despite a belief that changing attitudes have improved self-esteem and well-being and reduced isolation (Collins, 2008). However, critical evaluation of the literature suggests a focus on HIV risk, prevention and testing from a medical perspective (Darling, Diserens, N'garambe, Ansermet-Pagot, Masserey, Cavassini & Bodenmann, 2012; Holt, Lea, Murphy, Ellard, Rosengarten, Kippax & De Wit, 2014), hence the rationale of this dissertation to focus on the social correlates of attitudes towards HIV (Mukolo, Blevins, Victor, Vaz, Sidat & Vergara, 2013) from an intergenerational perspective.

6. **Research questions/hypotheses** (what you expect to learn): The following research questions have been identified: a two-tailed non-directional hypothesis to explore whether independent variables (IVs) of age, sexual orientation and exposure to health promotion & media campaigns will have an effect on the dependent variable - in this case focusing on attitudes toward HIV. The direction of the effect is not specified, however, with a null hypothesis proposing there is no relationship between attitudes toward HIV and age (and other IVs stated). Thus, any correlations will be due to chance and will not be significant in terms of supporting the questions being investigated. An alternative or experimental hypothesis, however, proposes that age (and other IVs) does have an effect on attitudes toward HIV. As such, significant results will not be due to chance and will support the theories being investigated.
  
7. **Procedure** (provide a summary of how you will conduct the research. More detailed responses should be given in the appropriate sections of the form, you may refer to them here): A quantitative analysis will be performed on an attitudinal/age-cohort questionnaire/survey using graphical representations and multivariate logistic regressions (O'Brien & Dunson, 2004). Participants will be aged 16-80 (N= approximately 100), with age categories identified accordingly. The sample will include undergraduate and postgraduate populations, as well as participants from the wider community. This was chosen on the basis of providing as broad an age range of respondents as possible. The size of sample will provide enough power and strength of effect for investigating whether the experimental hypothesis will be supported (Dancey & Reidy, 2004).
  
8. **Proposed timetable for research** (include deadlines for data collection and contingency plans) : July 2015: Meeting with social psychology lecturer (CC) to discuss initial interest in research topic; November 2015: Initial meeting with dissertation supervisor (LH) to explore interest area in detail; December 2015/ January 2016: Completion of ethics application and discussion with supervisor of such (LH); February 2016: Ethics application submission/ work on literature review to inform introduction and discussion/ fine tune questionnaire in readiness for data collection; Spring 2016: Subject to ethical approval, begin survey and data collection. Meet with supervisor on regular basis as required; Summer 2016: Write up research findings; Early September 2016: Submit final draft to supervisor for approval/ amendments.
  
9. **Describe any risk of physical harm or psychological distress to participants, however minor, in the recruitment process, during data collection or post data collection.** Provide details of how you will minimise and manage any issues. You must include details of your debrief procedures here: There is no risk of physical harm to participants taking part in this research. Low-level psychological discomfort may be experienced by the identification of personal attitudes towards HIV, although people can choose not to take part in the research (or stop during) for reasons of discomfort, disinterest, (seeming) irrelevance, embarrassment or fear (Green & Witte, 2006). For those who do take part, debriefing procedures will include clear signposting/ contact details for specialist HIV/AIDS organisations and HIV-related information and advice should subsequent support be required. The questionnaire-based approach to this research will address, minimise and mitigate against psychological distress via close consideration of the Helsinki declaration, BPS code of Ethics and Conduct (2009) and the BPS code of Human Research Ethics (2011). As with all survey-based questionnaires, honesty and accuracy of respondents is paramount (VanderStoep & Johnston, 2008; 2009) and lack of honesty is (to some extent) subjugated by the anonymity afforded by the experimental

design. Despite the potential for researcher bias in the design of the questionnaire (and discussion of results), the issue of reflexivity will also be explored as attested by Braun & Clarke (2006).

**10. Is there any deception involved in the study?**

☒ No

☐ Yes → Justify use of deception and provide debrief details: *Click here to enter text.*

**F. SAMPLE SIZE, PARTICIPANTS AND RECRUITMENT**

***If you are utilising internet mediated data collection methods you must consult the relevant guidelines, consider them in this section and make your procedure clear, particularly for questions 20-24.***

**11. Who do you intend to recruit for participation in your study?**

☐ No recruitment

↳ ☐ Pre-existing data    ☐ Media/online-media based research (eg: forums)    ☐ Other → Explain: *Click here to enter text.*

☒ Human participants

☐ Non-human animal subjects OR Both non-human animal subjects and human participants

↳ If during the course of the research the costs to the individual animal/s rose above that expected, describe the point at which you would remove the animal from the research. *Click here to enter text.*

↳ Once the animal has been removed from the research describe how any distress and harm caused will be dealt with. *Click here to enter text.*

↳ If you are working with both human and non-human animal participants and during the course of the research the costs to the individual animal/s rose above that expected and were removed from the research is there any likely distress caused to the human participant? Explain and give details of how you will minimise harm and distress: *Click here to enter text.*

☐ Combination of the following: Check all that apply

↳ ☐ Pre-existing data    ☐ Media/online-media based    ☐ Other → Explain: *Click here to enter text.*

☐ Human participants    ☐ Non-human animal subjects OR Both non-human animal subjects and human participants

**12. What is the sample size for your study?** (If you are a UG or PGT student you should discuss this with your supervisor.. If you are using pre-existing data or online/media based research, give details of the type and size of sample eg: number of participants; number, type and extract length of interviews/case studies/articles/programmes/films).  $N = 100$

**13. Was a statistical/power analysis conducted to determine the adequate sample?**

☒ Yes → give details *A Daniel Soper statistical power analysis with 6 predictor variables calculated  $N = 97$  as an appropriate sample size.*

☐ No → describe how you determined the sample size (where appropriate you should refer to Section E)

**14. Where will the proposed recruitment and/or data collection take place?** (If you are using pre-existing data/online/media based research you should still indicate a location and consider related health and safety issues and issues of data protection and storage in relevant sections of this form). Check all that apply

- ☐ A University of Chester campus → Give details: [Click here to enter text.](#)
- ☒ Online (including RPS) → Before you continue, consult BPS guidelines for internet mediated research and you must provide appropriate details in relevant sections. E.g. participant information; informed consent; withdrawal procedures etc.
- ☒ Other site(s) → Give details: In addition to RPS, family, friends and acquaintances of the researcher will be invited to take part in the investigation by email and word of mouth.

**15. Have health and safety issues been adequately considered?** [Click here to enter text.](#)

- ☐ I am a UG or PGT student using pre-existing data and I have attended the recommended health and safety briefing.
- ☐ Yes → Office use only: Confirmation of attendance Y ☐ N ☐
- ☐ No → Explain why & provide details of alternative arrangements & considerations [Click here to enter text.](#)
- ☒ I am a UG or PGT student collecting data from human participants and/or non-human animal subjects and I have attended the recommended Health and Safety briefing.
- ☒ Yes → Confirmation of attendance Y ☐ N ☐
- ☐ No → Explain why and provide details of alternative arrangements and considerations [Click here to enter text.](#)
- ☐ I am a member of staff/PGR student and I have attached a risk assessment form. [Attach suitable documentary evidence of permission. If you have not attached documentary evidence explain why.](#) [Click here to enter text.](#)

**16. Is permission to recruit potential participants/subjects required from an organisation other than the University of Chester?**

- ☐ Yes → Explain: [Click here to enter text.](#) [Attach suitable documentary evidence of permission. If you have not attached documentary evidence explain why.](#) [Click here to enter text.](#)
- ☒ No → Explain: *Non-applicable*

**17. Will participants fall into any of the following special groups?**

- ☐ Schoolchildren (under 16 yrs of age)
- ☐ People with learning or communication difficulties
- ☐ Patients/clients
- ☐ People in custody
- ☐ People engaged in illegal activities (e.g. drug-taking)
- ↳ If any of the above boxes are checked consult BPS guidelines on the protection of vulnerable persons. If you are a student, consult with your supervisor before continuing with your application.
- ☒ None of the above → Go to Q18
- If you are working with vulnerable persons, ascertain whether it is necessary to obtain satisfactory DBS clearance (or equivalent for overseas students) for all applicants who will be in contact with vulnerable persons, then check one of the following:
- ☐ DBS clearance obtained and shown to supervisor.
- ☐ DBS clearance is not necessary → Explain: [Click here to enter text.](#)
- [Attach suitable documentary evidence. If you have not attached evidence explain why.](#) [Click here to enter text.](#)

**18. Describe how your sample will be identified and how you obtained contact information.** *Students, family, friends and acquaintances of the researcher (via RPS and e-mail) will be invited to take part in the investigation. Information will be made available on the RPS webpage and via email using the participant information sheet .*



**19. Indicate the types of recruitment to be used** and attach copies of all materials. If you have not attached evidence explain

**why:** [Click here to enter text.](#) Check all that apply

Do you need permission to contact potential participants and/or display material?

☒ No ☐ Yes Explain and give details: [Click here to enter text.](#)

☐ I am using pre-existing/online/on-line media based data → Go to Section G

☐ I am using non-human animal subjects and I have completed Q18. → Go to Section G

☒ I am using human and non-human animal subjects and I have completed Q18 and provided information below.

☒ RPS [Ensure you have the required number of credits](#)

☒ Letters/emails to potential participants

☐ Social media [Ensure you have consulted BPS guidelines for internet mediated research and you must provide appropriate details in relevant sections.](#)

☐ Flyers/posters/brochures

☒ Verbal script (face-to-face or telephone recruitment)

☐ Websites

☐ Powerpoint presentation

☐ Newspaper/magazine advertisements ☐ Radio/tv advertisements

☐ Other [Click here to enter text.](#)

**20. Indicate if this research exclude any persons from the participation or analysis stage on the basis of:**

☐ Gender ☐ Ethnicity ☐ Age ☐ Sexual orientation ☐ Mental health issues ☐ Specific learning difficulties

☐ Physical factors (e.g. physical ability, visual acuity, language/accent, handedness etc)

☐ Other [Click here to enter text.](#)

a) If you are excluding any participants on the basis of any of the above categories, please justify their exclusion and discuss how any issues of distress and/or embarrassment arising from the exclusion will be minimised, monitored and managed during this process. [Click here to enter text.](#)

No exclusions apply ☒ → Go to Q21

**21. Will potential participants be asked any screening questions to determine whether they will be recruited?**

☒ No → Go to Q22

☐ Yes → Explain and describe how you will minimise, monitor and manage any issues of distress and embarrassment: [Click here to enter text.](#)

**22. How will informed consent be sought?** *The participant information sheet clearly indicates the purpose and procedures of the research, including a statement allowing for omission of response/participant withdrawal during the process. As the investigation is survey-based, completion and submission of a questionnaire implies consent has been given by a participant.*

**23. How will anonymity and confidentiality be maintained during recruitment and data collection?** *In line with ethical practices, questionnaires will remain anonymous from the outset. Research findings will not allow for*

*the identification of participants and paper and electronic data will be stored in accordance with conditions prescribed under the Data Protection Act 1998.*

**24. How will participants be able to withdraw from data collection?** *Non-return of questionnaire and/or verbal/written communication following invitation to take part.*

↳ Is there a time limit for withdrawal? Explain: Up to the point of questionnaire submission (as detailed in the P.I.S.)

↳ What will happen to any partially collected data? Explain: *It will be destroyed (in accordance with the principles of the Data Protection Act 1998).*

**25. What is the time commitment expected of participants?** *10 - 15 minutes.*

**26. Indicate the type and amount of compensation participants will receive.** ☒ None

Amount value: *Click here to enter text..* ☐ Money: ☐ Gift certificate: ☐ Travel Expenses: ☐ Other: Explain:

*Click here to enter text.*

**27. Indicate where the following information will be available to participants.** Attach documentary evidence.Check all that apply.

	<u>Information sheet</u>	<u>Letter</u>	<u>Email</u>	<u>Email info. page</u>	<u>Consent Form</u>	<u>PowerPoint</u>	<u>N/A</u>
Brief details about the purpose of the study	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact details for further information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explanation of how and why participant has been chosen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Notification that materials/interviews are not diagnostic tools/therapy or used for staff review/development purposes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explanation participation is voluntary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Details of any incentives or compensation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Details of how consent will be obtained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If research is observational, consent to being observed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Details of procedure so participants are informed about what to expect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Details of time commitments expected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Details of any stimuli used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Explanation of right to withdraw and right to withdraw procedure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Option for omitting questions participant does not wish to answer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Procedure regarding partially completed questionnaires or interviews	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With interviews, information regarding time limit for withdrawal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Details of any advantages and benefits of taking part	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Details of any disadvantages and risks of taking part	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Information that data will be treated with full confidentiality and that, if published, those data will not be identifiable as theirs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debriefing details	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Dissemination information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Further information (relevant literature; support networks etc)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you have checked n/a for any of the above, provide further details: *Participation is voluntary so no 'choosing' of participants will take place; there are no incentives or any form of compensation for taking part; consent does not need to be obtained as submission of a questionnaire implies consent; no observation, stimuli or interviews will be used in the study; (and) there are no known disadvantages to taking part.*

Ensure you have provided further details regarding the above in the relevant sections of the form and attached any necessary documentation. If you have not attached the necessary documentation explain why:

## G. DATA COLLECTION

28. Indicate the types of data collection methods that will be used Attach copies of all materials (where appropriate)

Check all that apply

- ☐ I am using pre-existing data and have indicated all the original methods of data collection below.
- ☐ Online/online-media based research answer 28(a) and (b)
- ☐ Observations Diaries/Journals completed by researcher attach any instructions given to participants and any multi-media stimuli answer 28(a) and (b)
- ☐ Observations Diaries/Journals completed by participants attach any instructions given to participant and any multi-media stimuli answer 28(a) and (b)
- ☒ Questionnaires/Surveys attach version of questionnaire that will be used in study, answer 28(a) and (b)
- ☐ Individual interviews attach list of questions/topics and any multi-media stimuli, answer 28(a) and (b)
- ☐ Focus groups attach list of questions/topics and any multi-media stimuli, answer 28(a) and (b)
- ☐ Biological specimens (e.g. blood, urine) Go to Q29
- ☐ Biomedical devices (e.g. Biopac) Go to Q29
- ☐ Cognitive measures (e.g. Reaction time, accuracy, recognition) attach copies of stimuli and answer 28 (a) and (b)
- ☐ Multimedia stimuli attach original material (where appropriate) URL links or other relevant information and answer 28 (a) and (b)
  - ↳ ☐ Video/DVD
    - ☐ Online/video gaming footage
    - ☐ Web sites/On-line forums
    - ☐ Written text (e.g. newspapers, magazine, books, transcriptions, scenarios, vignettes)
    - ☐ Audio (e.g. radio broadcasts, recordings)
    - ☐ Still images
    - ☐ Stimuli made from recordings of other persons that are not in the public domain (e.g. personal photographs, video/audio recordings)
      - ↳ If stimuli are identifiable, obtain consent for their use attach evidence of consent
- a) Does the content of the material contain anything that could cause distress or alarm and/or involve sex, violence, substance abuse, profanity, impudence or other types of mature content? Fully consider the suitability of the stimuli and the possible impact on the participant/researcher attach original material (where appropriate) URL links or other relevant information

☒ No → Briefly describe the content: Please see attached questionnaire.

☐ Yes

↳ Is the material from a source that has been given a universally acceptable certification OR has the source been considered by an appropriate agency with regard to suitability for audiences in terms of its ability to cause distress or alarm and/or in terms of content issues involving sex, violence, substance abuse, profanity, impudence and other types of mature content? (eg: material used by multi national media organisations and widely accessible by general audiences)

☐ Yes → Provide details and justify the use of the material. Explain how you will minimise, monitor and manage any issues of distress to the participant and/or researcher

☐ No/not sure → Explain, provide details and justify the use of the material. Explain how you will minimise, monitor and manage any issues of distress to the participant and/or researcher.

b) Once data collection is complete what action will be taken to ensure that participants and/or researchers leave the research in a positive frame of mind? Grateful thanks at end of questionnaire with signposting to appropriate agencies for further information if necessary (as per 'Participation Information Sheet' contact information).

**29. How will you collect your data? Check all that apply**

☐ I am conducting an experiment

Provide full procedural details [Click here to](#)

*enter text.*

☐ I am using observations/diaries/journals

Provide full procedural details [Click here to enter](#)

*text.*

☒ I am conducting surveys/interviews/focus groups

Provide full procedural details *Please see attached*

*participant information sheet and questionnaire.*

☐ I am conducting internet based research

Provide full procedural details [Click here to enter](#)

*text.*

☐ I am conducting media based research

Provide full procedural details [Click here to enter](#)

*text.*

☐ I am using pre-existing data.

Provide full details of how the data was originally

collected making specific reference to key ethical considerations of management of harm & distress, consent, anonymity & confidentiality [Click here to enter text.](#)

- 30. Will you make any recordings of human participants?** (interview/focus groups, observations, images of participants' bodies)  
☐ Yes → Go to question 31    ☒ No → Go to section H
- 31. What will be recorded?** Check all that apply  
☐ Interview   ☐ Focus Group   ☐ Images of participants' bodies   ☐ Observations   ☐ Other → Explain: *Click here to enter text.*
- 32. How will the data be recorded?** Check all that apply  
☐ Video   ☐ Audio   ☐ Photographs   ☐ Written transcripts   ☐ Other → Explain: *Click here to enter text.*
- 33. Can participants' identities be determined from the recording?** (If the recording is a facial photograph/video or audio recording of a voice, the correct answer is 'yes'.)  
☐ No  
☐ Yes → Describe how you will protect privacy and anonymity during transcription and analysis. *Click here to enter text.*
- 34. Will the recordings be destroyed?** NOTE: Participants must consent to their recordings being retained/archived.  
☐ Yes → Explain how and when *Click here to enter text.*  
☐ No → Justify retaining the recordings **and attach evidence of consent:** *Click here to enter text.*
- 35. Will the recordings be used outside of this research study?** NOTE: Participants must consent to all outside uses of their recordings.  
☐ Yes → Answer Question 36 **and attach evidence of consent**  
☐ No → Go to Section H
- 36. How will the recordings be used outside of this research study?** Check all that apply  
☐ Shared with other researchers not listed on this application: Explain: *Click here to enter text.*  
☐ Used for research dissemination (conferences, journals, media publications, consultancy) *Click here to enter text.*  
☐ Used for educational purposes (e.g. training, teaching): Explain: *Click here to enter text.*  
☐ Used within a commercial/public organisation: Explain: *Click here to enter text.*  
☐ Other → Explain: *Click here to enter text.*
- 37. When the recordings are used outside of this research study, will they contain identifiable information** (e.g. names, facial photographs/video, unmodified voices)?  
☐ No  
☐ Yes

↳ Will disclosure of participants' identity outside this research study reasonably place participants at risk for criminal

or civic liability or be damaging to participants' financial standing, employability or reputation?

☐ Yes → Explain why it is necessary to disclose participants' identity: *Click here to enter text.*

☐ No → Go to Section H

## H. DATA ANALYSIS

**38. Describe your methods of data analysis:** A quantitative analysis will be performed on an attitudinal/age-cohort questionnaire/survey using graphical representations and multivariate logistic regressions. Participants will be aged 18-80 (N=100) with age categories identified accordingly.

## I. DATA PROTECTION AND STORAGE

**39. Where and in what form will the research materials be stored?** Describe fully the storage process during collection, analysis and archiving and consider issues of security.: *Paper and electronic questionnaires will be stored during collection and analysis. Paper copies will be stored in a locked, metal box-file at the researcher's home and electronic copies will be stored on a password protected memory stick (also locked in the box-file).*

**40. Will the research materials be destroyed on completion of the project?**

☒ Yes → Explain how and when: Following completion of the investigation, paper copies will be scanned and converted for digital archiving (together with other electronically submitted questionnaires) and held in accordance with Data Protection and Chester University guidelines on a password protected memory stick (locked in a metal box-file) until such time they can be deleted and destroyed. All paper copies will then be shredded accordingly.

☐ No → Explain why the materials need to be maintained: *Click here to enter text.*

**41. Will the research materials include any identifying information (e.g. names, telephone numbers)?**

☒ No

☐ Yes → Describe the type of information and justify why it will be retained: *Click here to enter text.*

↳ Will the identifying information be deleted?

☐ Yes → State when and justify the retention of the information until this time: *Click here to enter text.*

☐ No → Justify the retention of the information: *Click here to enter text.*

## J. DISSEMINATION

**42. How will the research results be shared?**

☒ Academic assessment (e.g. dissertation; assignment report) Explain and give details: *MSc Psychology (Conversion), University of Chester 2016.*

☐ Academic dissemination (e.g. Journal publication; conferences) (If you are an UG or PGT student you must discuss this with your supervisor before checking this box). Explain and give details: *Click here to enter text.*

☐ Non-Academic dissemination (e.g. printed/online article) (If you are an UG or PGT student you must discuss this with your supervisor before checking this box). Explain and give details: *Click here to enter text.*

☐ Academic learning & teaching (e.g. class based research exercise) Explain and give details: *Click here to enter text.*

☐ Consultancy (If you are an UG or PGT student you must discuss this with your supervisor before checking this box).

Explain and give details: *Click here to enter text.*

☐ Commercial/public sector. ( If you are an UG or PGT student you must discuss this with your supervisor before checking this box). Explain and give details: *Click here to enter text.*

☐ Other (If you are an UG or PGT student you must discuss this with your supervisor before checking this box).

Explain and give details: *Click here to enter text.*

**43. How will privacy and confidentiality be maintained during dissemination?** *Due to anonymity afforded by research methodology which, in turn, will be disseminated in accordance with Chester University policies and procedures.*

**44. Are there any specific considerations about sharing the research?** (eg: Is the data from friends and family and potentially embarrassing/upsetting for someone who reads it? Is the data relating to employee satisfaction/wellbeing and likely to be seen by senior staff?). *No.*





UNIVERSITY OF CHESTER DEPARTMENT OF  
PSYCHOLOGY

**YOU HAVE NOW COMPLETED THE APPLICATION FORM. PLEASE READ AND SIGN THE FOLLOWING DECLARATION:**

*I confirm that I have familiarised myself with the regulatory codes and codes of conduct and ethics relevant to my area of research, including those of relevant professional organisations and ensure that the research which I propose is designed to comply with such codes.*

*I have familiarised myself with the following:*

*Department of Psychology Ethical Approval for Research: Procedural Guidelines.*

*University of Chester Research Governance Handbook*

*BPS Code of Ethics*

*BPS Code of Human Research Ethics*

*BPS Guidelines for Internet-mediated Research*

*BPS Research Guidelines and Policy Documents*

*I confirm I understand that:*

*All applications must be submitted according to the guidelines set out, assessed by at least 2 reviewers and are subject to discussion by departmental ethics committee. Data collection is not permitted until applications have been approved. Collecting data without ethical approval is a serious breach of the BPS Code of Ethics.*

*Any change of plans to the research after the approval MUST be discussed by ethics committee. chair's action may be taken for minor changes.*

**Print the completed form off onto BLUE paper with the appendices on white paper. Handwritten applications are not accepted. Submit to the department office by the agreed deadline. Applications submitted after this deadline will not be processed until the following committee meeting.**

**If you are a member of staff or a PGR student, in addition to 2 paper copies you MUST submit an electronic version to [c.leach@chester.ac.uk](mailto:c.leach@chester.ac.uk).**

**DATE: 05/02/2016**

**PRINT NAME:**



University of  
Chester

UNIVERSITY OF CHESTER DEPARTMENT OF PSYCHOLOGY  
APPLICATION FOR ETHICAL APPROVAL REVIEW FORM

**A) Applicant and submission details**

**Name of applicant:** James Johnson

**Project title:** An investigation of intergenerational attitudes to HIV and AIDS

**Applicant status:** ☐ UG ☒ PGT ☐ PGR ☐ Staff

**If you are the applicant's supervisor, have you discussed ethical issues with the applicant?**

☐ Yes, the applicant is an UG/PGT student and I wish to send the application for accelerated student review.

☐ Yes, the applicant is a UG/PGT student and I wish to send the application for full review.

☐ Yes, the applicant is a PGR student and I wish to send the application for full review.

☐ No → Comments: Click here to enter text.

**B) Review of application**

**1. Has the applicant signed and dated the form?**

a) ☒ Yes → Go to Q2 ☐ No → Return to applicant for signature before continuing with review process.

**2. What is the submission type?**

a) ☒ First submission to this or any other committee

b) ☐ Resubmission of a rejected application by this committee

↳ Is there a summary of the requirements of the committee? Is the original application attached?:

☐ Yes ☐ No → Return to applicant for full details

c) ☐ Revised submission intended to replace an application approved by this committee

↳ Is the original application attached?: ☐ Yes ☐ No → Return to applicant for full details

d) ☐ First submission to this committee; has been submitted to another committee.

↳ Is the original application attached? ☐ Yes ☐ No → Return to applicant for full details

**3. Research Plan and Methodology**

a) Is the study well formulated in terms of drawing on the relevant literature and is it methodologically, analytically and scientifically sound?

☒ Yes ☐ No

Comments: Yes, however the study design is correlational rather than experimental (see response to question 9 for instance). Also, information should be provided on the validity and reliability of the scales used in the questionnaire.

b) Are the timescales provided appropriate?

☒ Yes ☐ No

Comments: Click here to enter text.

c) Are there contingency details?

☒ Yes ☐ No

Comments: Different methods of data collection

d) Is there consideration of how to minimise, manage and monitor issues of distress and harm, however minor?

☒ Yes ☐ No

Comments:

- e) Are appropriate debrief details provided?  
☒ Yes ☐ No Comments: [Click here to enter text.](#)
- f) Are appropriate details regarding the use and management of deception provided?  
☐ Yes ☐ No ☐ N/A Comments: [Click here to enter text.](#)

**4. Sample size, participants and recruitment**

- a) Has the applicant provided appropriate details of the sample and how it will be identified? (this information will be in Q11, Q12, Q13, Q17, Q18, Q20, Q21)  
☒ Yes ☐ No Comments: [Click here to enter text.](#)
- b) Has the applicant provided appropriate details of where the research will take place, including issues regarding permission and appropriate health and safety information?. Is the necessary documentation attached?  
☒ Yes ☐ No Comments: [Click here to enter text.](#)  
 If the applicant is a taught student and they did not attend the mandatory H&S briefing have they provided appropriate evidence that they have full and satisfactory awareness of the relevant health and safety protocol?  
☐ Yes ☐ No ☐ N/A Comments: [Click here to enter text.](#)
- c) Has the applicant provided appropriate details and attached the necessary documentation concerning their recruitment procedures? In particular, have they appropriately considered how to minimise, manage and monitor issues of distress and harm?  
☒ Yes ☐ No Comments:  
 Are there appropriate RPS credits? ☐ Yes ☐ No ☐ N/A
- d) Has the applicant provided appropriate details and attached the necessary documentation concerning the information made available to participants? In particular, are there appropriate considerations if using internet mediated research?  
☐ Yes ☒ No Comments: *The information sheet should state that completion of the questionnaire assumes informed consent. The advantages of and risks from taking part in the research are not clearly detailed on the information sheet. The email message is not attached nor is the verbal script if recruitment is also taking place face to face (verbal script has been ticked in response to question 19 but there is no mention anywhere of face to face recruitment). It is written on the information sheet that participants can email to receive a paper copy of the questionnaire, however the procedure for return of a paper copy of the questionnaire is not described – the procedure needs to ensure participant anonymity.*

Is there appropriate consideration of how to manage issues of distress and harm?

- ☒ Yes ☐ No Comments:  
 Are there appropriate details regarding informed consent?  
☐ Yes ☐ No Comments: *see comments above*  
 Are there appropriate details regarding anonymity and confidentiality?  
☒ Yes ☐ No Comments: [Click here to enter text.](#)  
 Are there appropriate details regarding withdrawal procedures?  
☒ Yes ☐ No Comments: [Click here to enter text.](#)

- e) Are there appropriate details regarding time commitment from participants?  
☒ Yes ☐ No Comments: [Click here to enter text.](#)
- f) Are there appropriate details regarding compensation arrangements?  
☐ Yes ☒ No Comments: *Psychology University of Chester student participants can receive SONA*

credits if they participate via RPS. This should be indicated in response to question 26. The number of credits to be received should also be stated in response to question 26 and on the participant information sheet.

**5. Data Collection and Analysis**

- a) Has the applicant provided full procedural details and attached the necessary documentation concerning data collection procedures?  
☒ Yes ☐ No      Comments:

**6. Data Analysis**

- a) Has the applicant provided appropriate details concerning data analysis?  
☒ Yes ☐ No      Comments: *Click here to enter text.*

**7. Data protection and Storage**

- a) Has the applicant provided appropriate details concerning data protection and storage? Have security issues been properly considered?  
☒ Yes ☐ No      Comments: *Click here to enter text.*

**8. Dissemination**

- a) Has the applicant provided appropriate details concerning research dissemination?  
☒ Yes ☐ No      Comments:  
 Are there appropriate details regarding how privacy and confidentiality will be maintained during dissemination?  
☐ Yes ☐ No      Comments: *Add that findings will be disseminated as group data not individual data*  
 Are there appropriate details regarding any specific considerations about sharing the research?  
☒ Yes ☐ No      Comments: *Click here to enter text.*

General comments: *Sound consideration of ethical issues overall but some information is missing from the information sheet and there are a few other difficulties that need addressing. It should be possible to address these points with an amendment form.*

**Review status**

- ☒ Chair's action  
☐ Staff/PGR for full review      ☐ UG/PGT for full review  
☐ Work with external agencies      ☐ Work with vulnerable participants  
☐ Other issues/concerns *It is not clear at the moment if there is intention to publish the findings – the information sheet implies that this might be a possibility. If so the ethics application should go for full review.*

**NAME:** *Claudine Lucas*

☐ Supervisor    ☐ Supervisor/Reviewer 1    ☐ Reviewer 1    ☒ Reviewer 2

**DATE:** *10/02/2016*



**ETHICS COMMITTEE DATE :** Click here to enter a date.

**CHAIRS COMMENTS:** Click here to enter text.

Please see comments on renewers  
form and act on these particular  
ref. to info sheet & production  
of verbal script.

☐ **ACCEPTABLE**

Action: You may now commence with data collection subject to approval from any relevant external agencies.

**DATA COLLECTION IS NOT PERMISSABLE UNDER THESE CONDITIONS**

☒ **ACCEPTABLE SUBJECT TO SUBMISSION OF AMENDMENT FORM**

☒ Acceptable subject to conditions listed by chair. Discuss conditions highlighted with supervisor and submit ethics application amendment form direct to office.

☐ Acceptable subject to conditions listed by chair: Submit ethics application amendment form direct to office.

☐ **ACCEPTABLE SUBJECT TO CONDITIONS LISTED BY CHAIR:**

Action: Resubmit application for full review ensuring you have completed section B

☐ **REVISE AND RESUBMIT:**

Action: Resubmit application for full review ensuring you have completed section B

SIGNATURE: ..... *Moira Elphinstone* .....

Office Use Only

DOPEC NUMBER

## Appendix F – Ethics Amendment & Approval Form



University of  
Chester

UNIVERSITY OF CHESTER, DEPARTMENT OF PSYCHOLOGY  
APPLICATION FOR ETHICAL APPROVAL AMENDMENT FORM

### A) Applicant and personnel

**Applicant:** James Johnson  
**Project title:** *An investigation into Intergenerational Attitudes towards HIV & AIDS*  
**Applicant status:** ☐ Staff → Go to Section B ☐ PGR ☐ Undergraduate ☒ Postgraduate taught  
**Supervisor:** Dr Liane Hayes

### B) Declaration

1. ☒ I have submitted an application for ethical approval to the Department of Psychology Ethics Committee and I am required to make the following amendments to my application.  
 List the recommendations of the committee. (1) Inclusion of 'assumed informed consent' in response to questionnaire completion to be stated on Participant Information Sheet (2) Clear statement concerning advantages & risks of taking part to be included on Participant Information Sheet (3) Email message and verbal script to be written & submitted regarding participant recruitment (4) Description of email process for request & return of paper copies of questionnaires (which ensures participant anonymity) (5) Evidence to support validity of questionnaire scales  
 Describe how you have addressed these requirements. (1) 'Submission of completed questionnaire assumes informed consent' added to Participant Information Sheet (please see attached) (2) Statement concerning advantages & risks added to Participant Information Sheet (please see attached) (3) Email message and verbal script (please see attached) (4) Email process for request & return of questionnaires (please see attached) (5) Validity of questionnaire scales (please see attached)
2. ☒ I have submitted an application for ethical approval to the Department of Psychology Ethics Committee that was approved on 12/02/2016  
 I wish the committee to consider the following amendments I would like to make to the research plan (attach the original approved application form)

☐ I am a member of staff. **Signed:** \_\_\_\_\_ **Date:** Click here to enter a date.

Print the amendment form on BLUE PAPER and submit to the Dept. Office

☒ I am an UG/PGT/PGR student. I have discussed any amendments with my project supervisor.

Print the amendment form on BLUE PAPER and submit to the Dept. Office

**Signed:** *T. Johnson* (Lead Applicant) **Date:** 15/03/2016

#### Supervisor comments:

I have discussed the recommendations of the committee with the applicant and I am satisfied they have met the stated requirements. I support the amendments to the research plan. (delete as appropriate)

☒ Yes Sign and date the form

☐ No Comments: Click here to enter text.

JTLH220316.

Signed: W. M. M. M. (Supervisor) Date: 17/03/16 (Click here to enter date.)

**COMMITTEE COMMENTS:**

☒ **ACCEPTABLE:** You may now commence with data collection subject to approval from any relevant external agencies.

**DATA COLLECTION IS NOT PERMISSABLE UNDER THESE CONDITIONS**

☐ **ACCEPTABLE SUBJECT TO SUBMISSION OF FURTHER AMENDMENT FORM.**

☐ Acceptable subject to conditions listed by chair. Discuss conditions highlighted with supervisor and submit ethics application amendment form direct to office.

☐ Acceptable subject to conditions listed by chair: Submit ethics application amendment form direct to office.

Signed:

Moira E. Lafferty

Date: 22/03/16 for a date.



**Appendix G – Multiple Regression Normal Probability Plot and Scatterplot**

**Normal P-P Plot of Regression Standardized Residual**

**Dependent Variable: AttMeas2\_sum**

